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ABSTRACT

The Greater Avenues for Independence (GAIN) legislation in California mandated a full range of employment-related training and supportive services designed to provide welfare program applicants and recipients with the skills needed to acquire unsubsidized employment through education and training. Tests to assess the basic reading, mathematics, and functional listening comprehension skills of GAIN participants were developed over 6 years; the GAIN Appraisal Program now contains scores of 191,863 GAIN clients in 58 counties in California for July 1986-April 1990. Some of the results of the data collection include the following: (1) in the GAIN study population, 64.2 percent are female and 35.8 percent are male; (2) more than two-thirds of the GAIN participants are under 35 years old; (3) participants are mainly White (45 percent), Hispanice (25 percent), and Black (17 percent); (4) only 12 percent of the participants have completed more than high school education and 46 percent have completed high school; (5) approximately 76 percent of the GAIN group scored at a high school entry level in reading, and 36 percent could perform functional mathematics in the workplace; and (6) ethnic populations scored much worse than Whites on literacy and mathematics tests. A model was developed to permit simulated educational referrals integrating the recommended educational referral with test score and educational background. (Appendixes include sample GAIN Appraisal answer sheets, listening appraisal referrals, and information on the Levels A and AA tests and basic skills certification test.) (KC)

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GAIN
APPRAISAL PROGRAM
IV

FOURTH REPORT
1990

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CASAS Comprehensive Adult Student Assessment System

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GAIN
APPRAISAL PROGRAM
IV
FOURTH REPORT
1990

Prepared for
California State Department of Social Services

by

Comprehensive Adult Student Assessment System
San Diego, California

1990

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Executive Summary
GAIN Appraisal Program
Fourth Report

The Greater Avenues for Independence (GAIN) Legislation, AB 2580 (Chapter 1025), enacted by the California Legislature in September 1985, contained a full range of employment-related training and supportive services designed to provide Aid to Families with Dependent Children (AFDC) program applicants and recipients with the skills needed to acquire unsubsidized employment. Education and training are key components of this welfare reform legislation.

Assessment has been integral to the GAIN program since its inception, providing the foundation upon which training and educational needs are identified and an employability plan is developed. Implementation of the GAIN Legislation at the county level was designed to occur gradually over a six year period, beginning in June 1986. In keeping with the GAIN statute and regulations mandate which specifies that the county welfare departments shall determine if a registrant lacks basic literacy, mathematics, or English language skills, tests were designed and developed by the Comprehensive Adult Student Assessment System (CASAS) through a contract administered by the California State Department of Social Services in cooperation with the California Department of Education to assess the basic reading, math and functional listening comprehension skills of GAIN participants. Together these tests comprise the "GAIN Appraisal Program."

CASAS' test item validity has withstood ongoing internal review and external evaluation since 1980. The GAIN Reading Appraisal, the GAIN Math Appraisal, and the GAIN Listening Appraisal which comprise the GAIN Appraisal Program have proven to be internally consistent, reliable and accurate with the psychometric model used. On the basis of test results, participants lacking basic reading, mathematics or English language skills shall have provisions for obtaining these skills incorporated into their GAIN participant contract. Referral criteria are available to assist in appropriate referrals

to Adult Basic Education (ABE), General Educational Development (GED) instruction or English as a Second Language (ESL) programs. This educational opportunity facilitates the movement of GAIN participants toward unsubsidized employment.

TEST SCORE CHARACTERISTICS AND INTERPRETATION

CASAS assessment instruments have been widely used throughout the United States since 1980 to assess the functional literacy of adults and youth including an estimated 300,000 welfare recipients. Based upon this extensive experience and corresponding database, levels of functional literacy have been determined. The following briefly summarizes these levels of functional literacy relative to the workplace.

Below 200. Adults scoring below a 200 scale score have difficulty with the basic literacy and computational skills necessary to function in an employment setting and/or in the community. These adults can handle routine, entry-level jobs, but are often limited to jobs requiring only the most basic oral communication in a setting in which all tasks can be demonstrated. These adults have difficulty providing basic personal identification in written form (e.g. job applications), are not able to compute wages and deductions on paychecks, and cannot follow simple directions and safety procedures.

200 through 214. Adults scoring at a 200 through 214 scale score level can function in entry-level jobs that require simple oral communication skills where performance tasks are demonstrated. They have difficulty pursuing other than entry-level jobs requiring minimal literacy skills. They can fill out simple job application forms and demonstrate only basic computations.

215 through 224. Adults scoring at a 215 through 224 scale score level are able to perform basic literacy tasks and basic computational skills in a functional employment setting. They are generally able to function in jobs or job training that involves following oral and written instructions and diagrams. They usually have difficulty following more complex sets of directions.

225 and Above. Adults scoring at or above a 225 scale score can usually perform work that involves following oral and written directions in familiar and some unfamiliar situations. They can function at a high school entry level in basic reading and math and, if they do not have a high school diploma, can profit from instruction in General Educational Development (GED) and have a high probability of passing the GED test in a short time.

GAIN APPRAISAL PROGRAM DATABASE

Data collection which has been ongoing since the initial implementation of the GAIN Legislation includes not only test score performance but also provides salient demographic, educational and program characteristics of GAIN participants. Data presented herein update the GAIN III Report by 70,358 participants for the time period from May 1989 through April 1990. The data reported below are cumulative, based upon 191,863 GAIN clients throughout the 58 counties in California for the time period from July 1986 through April 1990.

This fourth annual GAIN report contains a wealth of information regarding GAIN clients in this study population throughout the state of California, the major findings of which are incorporated into this Executive Summary. As with any data, caution should be exercised in interpretation. Limitations in data collection, processing and analysis have their origins in the gradual implementation rates at the county level; data collection instruments modified over time based on evolving operational needs; and data collection materials which are submitted incomplete. Where some of the largest, most demographically diverse counties have not met projected implementation rates, those counties are underrepresented in this study population thus limiting the potential for the generalization of findings to the larger GAIN population. Program implementation rates rather than program size determine the proportional contribution of each county in this dynamic database.

DEMOGRAPHIC, EDUCATIONAL AND PROGRAM CHARACTERISTICS

The demographic, educational and program-specific characteristics of individual GAIN program participants are captured in the data collection process and subsequently aggregated for analysis and reporting purposes. Detailed data are presented in GAIN IV which provides a demographic and educational profile of GAIN participants in this study population. Program-specific characteristics of participants pertaining to their aid category (AFDC-FG, AFDC-U, RCA, GR), aid status (New, Existing, Restoration) and registration status (Mandatory, Voluntary) are also provided.

Demographic Characteristics

Gender. In this GAIN study population, 64.2 percent are Female and 35.8 percent are Male.

Age. More than two-thirds (67.5%) of the GAIN participants in this study population are less than 35 years of age and nearly half (48.7%) are age 25 to 35. Approximately 30

percent are from 35 to 50 years old and only three percent are 50 years and older. The age 45 and over category comprises 6.8 percent of this GAIN population.

Ethnic Background. Three ethnic categories account for 86.5 percent of this study population, namely Caucasian (44.7%), Hispanic (25.3%) and Black (16.5%). The remaining categories which together comprise 13.5 percent of this study population are Indo-Chinese (4.2%), Native American (3.6%), Asian (2.5%), Filipino (0.7%), Pacific Islander (0.6%) and Other (1.9%).

Native Language. Two languages, specifically English (83.7%) and Spanish (8.4%), account for more than 92 percent of the total reported. Seven languages (Vietnamese, Laotian, Cambodian, Korean, Chinese, Japanese and Tagalog) and an Other category account for the remaining 7.9 percent of the native languages reported .

Educational Characteristics

Highest Grade Completed. Only 12 percent of the study participants reported that they have completed more than 12 years of school. Approximately three-quarters (76.1%) of this population reported that they have completed nine through twelve years of education and approximately 12 percent of participants reported completion of less than nine years of school. Nearly seven percent of these reported completing 0-6 years and approximately six percent completed 7-8 years of school.

Diploma/Degree Awarded. Only 45.7 percent of the GAIN participants in this study population reported earning a High School Diploma or equivalent and eight percent reported having earned either a Technical, Associate of Arts (AA), or Four Year Degree. Another 46 percent reported that they had not earned a diploma/degree of any kind.

Last School Attended. Nearly 70 percent of those GAIN participants for whom data are available reported that the last school they attended (high school or below) was in California.

Program Characteristics

Aid Category. GAIN participants are classified into one of four aid categories including AFDC-Family Group (AFDC-FG), AFDC-Unemployed Parent (AFDC-U), Refugee Cash Assistance (RCA), or General Relief/General Assistance (GR). Nearly 70 percent (68.8%) are AFDC-FG and the remaining 31.2 percent are predominantly AFDC-U. The RCA and GR categories combined comprise less than one-half of one percent of this GAIN study population.

Aid Status. GAIN participants are further classified as a New, Existing or Restoration case. Approximately 47 percent of the GAIN participants in this study population are New cases. Existing cases accounted for another 47 percent and the remaining 6.4 percent are Restoration cases.

Registration Status. GAIN participants have either a Mandatory or Voluntary registration status. The greatest majority (84.6%) of the GAIN participants in this study population have a Mandatory registration status.

APPRAISAL SCORE PERFORMANCE

Assessment of GAIN participants' functional reading, mathematics and English listening comprehension skills is an integral component of the GAIN Appraisal process. Unless otherwise indicated, the GAIN Reading Appraisal and GAIN Math Appraisal are administered to participants to assess their basic reading comprehension and basic math skills in a functional or "life-skills" context. The following test score data are based on test score performance of 182,112 participants on the Reading and Math Appraisals for the time period from July 1986 through April 1990.

GAIN Reading and Math Appraisal Scores

Reading Appraisal Scores. Approximately 76 percent of this GAIN study population scored at or above a 225 scale score indicating that they can function at a high school entry level in basic reading and perform functional reading tasks. Nearly 14 percent had a reading appraisal score between 215 and 224 indicating that they are functioning below a high school level and only marginally capable of performing functional reading tasks. Approximately 12 percent had a scale score below 215 indicating that they could not demonstrate even a minimal level of functional literacy required for most jobs and indicating the need for an educational referral. The mean or average Reading Appraisal score was 233.3.

Math Appraisal Scores. Approximately 36 percent of the GAIN participants in this study population achieved a scale score of 225 and above on the Math Appraisal and would be able to perform functional math tasks in the workplace. The slightly greater than 26 percent who scored at the 215 through 224 level would be only marginally able to perform math tasks in the workplace. Of the remaining 37.5 percent, approximately 30 percent scored between a 200 and 214 scale score and nearly eight percent scored below 200. This means that more than one-third of the GAIN participants in this study population could not perform functional math tasks required for most jobs. The mean or average scale score on the GAIN Math Appraisal was 218.9 indicating that on the

average this GAIN population can perform basic math tasks at only a marginally functional level.

Appraisal Scores by Gender. Eighty percent of the females and approximately 70 percent of the males in this GAIN study population achieved a scale score of 225 and above on the GAIN Reading Appraisal and would be able to perform functional reading tasks in a work environment. Approximately 13 percent of the females compared to 16 percent of the males scored at the 215 through 224 level indicating their marginal ability to perform work-related reading tasks. Only 7.5 percent of the females compared to 13.7 percent of the males scored below 215 on the reading test indicating their inability to perform basic functional reading tasks required for most jobs. The mean reading scale score was 230.9 for males and 234.7 for females.

The percentage of males and females scoring at each scale score level on the GAIN Math Appraisal is nearly identical. Approximately 37 percent of both males and females achieved a scale score of 225 and above and 26 percent scored at the 215 through 224 level. In other words, approximately 63 percent of both males and females would be able to at least marginally perform functional math tasks in a work environment. More than 36 percent of the participants in both groups scored below 215 and would not be able to perform the functional math tasks required for most jobs. The mean math scale score was 219.3 for males and 219.1 for females.

Appraisal Scores by Age. Participants age 45 and over demonstrated lower functional literacy on the GAIN Reading Appraisal. Only 57.6 percent of participants age 45 and over achieved a scale score at the 225 and above level on the GAIN Reading Appraisal compared to from 74 to 79 percent of participants in each of the other age categories. The percentage of participants in each age category scoring below a 215 scale score on the Math Appraisal also increased with age. On the GAIN Math Appraisal, only 28.8 percent of participants age 45 and over scored 225 and above.

Appraisal Scores by Ethnic Background. Nearly 90 percent of the Caucasians in this study population scored at the 225 and above level compared to 30 and 35 percent respectively of the Indo-Chinese and Asians. The mean reading score by ethnic background ranged from 215.8 (Indo-Chinese) to 239.1 (Caucasian). Mean reading scale scores are lower than the overall mean (233.3) for Indo-Chinese (215.8) , Asians (218.4), Hispanics (229.2), Native Americans (229.3), Pacific Islanders (229.8), Filipinos (230.4), and Blacks (230.6).

The mean scale scores by ethnic background on the GAIN Math Appraisal were considerably lower ranging from 212.9 for both Asians and Indo-Chinese to 225.0 for

Caucasians. For the other ethnic groups, mean scale scores on the GAIN Math Appraisal were Blacks (213.3), Hispanics (214.0), Native Americans (215.1), Filipinos (216.3), and Pacific Islanders (216.8).

Appraisal Scores by Native Language. Eighty-one percent of participants who identified English as their native language had reading test scores at or above 225 compared to 57 percent of the participants who identified Spanish and 42 percent of the participants whose native language is Vietnamese.

There also exists a relationship between English reported as participants' native language and scores on the GAIN Math Appraisal. Approximately 39 percent of the participants' who reported English as their native language scored above 225 on the GAIN Math Appraisal compared to 34 percent of the participants whose native language is Vietnamese and approximately 19 percent of the participants who identified Spanish as their native language.

Appraisal Scores by Highest Grade Completed. Participants who completed more years of school had higher test scores than participants who completed fewer years of school. The mean reading scale score for participants who completed Grade Levels 0-6 was 216.0; for Grade Levels 7-8, 224.4; for Grade Levels 9-11, 231.4; for Grade Level 12, 236.9, and for participants who completed Grade Levels 13 and above, the mean reading scale score was 242.6.

Nearly three-fourths (74%) of the participants who completed six or fewer years of school scored below 215 on the GAIN Math Appraisal thus lacking the basic functional math skills required in most employment. The mean math scale score for participants who completed six or fewer years of school was 205.6 compared to mean scores of 209.6, 216.2, 222.2 and 229.8 for participants who respectively completed grades 7-8, 9-11, 12 and 13 or more years of school.

Appraisal Scores by Diploma/Degree Earned. The percentages of participants who scored above 225 on the GAIN Reading Appraisal ranged from 83 to 93 percent for those who reported earning a diploma or degree of some kind compared to only 63 percent for those who did not earn any type of diploma or degree. More than 16 percent of those without a diploma or degree scored below 215 on the GAIN Reading Appraisal and lack the minimal functional reading skills needed in the workplace.

The mean math appraisal score of 212.7 for participants who reported no diploma or degree of any kind is indicative of the lack of minimal functional math skills as well. The

mean scale scores on the GAIN Math Appraisal for participants who reported earning a diploma or degree of any kind ranged from 221.7 to 232.8.

Appraisal Scores by Location of Last School Attended. The mean score on the GAIN Reading Appraisal for participants in California was slightly higher (233.8) than the mean reading scale score (232.0) for those outside of California.

Where participants last attended high school or below appeared to have little impact on math test score performance. The mean scale score on the GAIN Math Appraisal was 218.5 for those in California and 218.1 for those out of state.

Appraisal Scores by Program Characteristics. The AFDC-FG category had the greatest percentage of participants scoring above 225 on the GAIN Reading Appraisal. The mean reading scores by Aid Category were AFDC-FG 234.7; AFDC-U 231.5; RCA 226.3; and GR 227.0. No notable differences were identified based on participants' classification as a New, Existing or Restoration case. There is a difference, however, between Voluntary and Mandatory registrants. The mean scale score on the GAIN Reading Appraisal was 233.0 for Mandatory whereas Voluntary registrants had a mean score of 237.1.

Math Appraisal score performance was similar for the two AFDC categories. Mean math scores were nearly identical for AFDC-FG (219.4) and AFDC-U (219.3) participants. Mean math scale scores were 213.3 for RCA participants and 212.4 for GR participants. Slight differences in math test score performance by Aid Status were identified. The mean math scale score for New cases was 219.8, Existing cases 218.4 and for Restoration cases the mean scale score was 219.2. There is a difference in GAIN Math Appraisal scores for Mandatory versus Voluntary registrants. Mandatory participants had a mean score of 218.7 compared to 221.3 for Voluntary participants.

Composite Appraisal Scores. Approximately 36 percent of the participants in this study population scored at the 225 and above level in both reading and math. Three percent scored at the 215 through 224 level on both tests, 4.5 percent scored at the 200 through 214 level on both tests and one percent scored below 200 on both tests. Approximately 54 percent of the GAIN participants in this study population scored lower on the Math Appraisal than the Reading Appraisal and only 2.3 percent scored higher in math than in reading.

Composite Appraisal Score Performance by Program Characteristics

Aid Category. Little difference was seen between the percentage of participants in the two AFDC categories who scored 225 and above on both tests (AFDC-FG 36.8% and AFDC-U 35.8%). There was a pronounced difference between these two groups, however, in the percentage who scored below 215 on both tests, 4.1 and 7.4 percent respectively. In the RCA/GR combined category, only 21.1 percent scored 225 and above on both the GAIN Basic Reading and Math Tests and more than ten percent (10.6%) scored below 215 on both tests.

Aid Status. More than 37 percent of the New participants, 34 percent of the Existing cases and 36 percent of the Restoration cases scored 225 and above on both the Reading and Math Appraisals. No notable differences in composite test score performance were identified relative to Aid Status.

Registration Status. Nearly 35 percent of the Mandatory participants compared to 42 percent of Voluntary participants scored at or above 225 on both the GAIN Reading and Math Appraisals.

PROJECTED EDUCATIONAL REFERRAL MODEL

A model was developed to permit simulated educational referrals integrating the general, recommended educational referral criteria with clients' composite test score performance and educational background. The following educational referral projections specific to this GAIN study population are derived from this model.

PROJECTED EDUCATIONAL REFERRALS

It is projected that 60 percent of the GAIN clients in this study population would receive an educational referral. Of these, it is estimated that more than one-third (34.2%) would be referred to Adult Basic Education (ABE) programs, 19.1 percent to General Educational Development (GED) instruction, 5.4 percent to English as a Second Language (ESL) programs and the remaining 1.6 percent to further diagnostic assessment. All participants projected to receive no educational referral projection minimally scored at 215 and above on both tests. Nearly two-thirds (65%) scored at the 225 and above level on both GAIN Appraisals and have a high school diploma or equivalent.

Educational Referral Projections by Program Characteristics

The projected educational referral model was further utilized to develop educational referral projections in conjunction with data regarding participants' aid category, aid status and registration status.

Aid Category. The greatest percentage of participants estimated to receive no educational referral is in the AFDC-FG category (43.1%) followed by AFDC-U (38.7%). Twenty-seven percent of the participants in the RCA category are projected to receive no referral as are 24.2 percent of the participants in the GR category.

Approximately 34 percent of both AFDC categories are projected for referral to ABE programs compared to greater than 44 percent of participants in the RCA category and more than one-half (51.5%) of participants in the GR category.

Educational referral projections to GED instruction are similar for both AFDC categories and also for participants in the GR category. Twenty to 22 percent in each of these categories are projected to receive a GED referral. Only 17.3 percent of the participants in the RCA category are projected to receive an educational referral to GED instruction.

The greatest percentage of projected educational referrals to English as a Second Language (ESL) is in the RCA category (8.9%) and the lowest percentage in the AFDC-FG category (1.4%). The percentages of participants in each aid category projected for referral to Level A or Level AA Testing ranged from one percent (AFDC-FG) to 2.5 percent (RCA).

Aid Status. No educational referral is projected for 42.8 percent of the New cases, 39.2 percent of the Existing cases or for 41.2 percent of the Restoration cases. Similar percentages in each group are projected for referral to ABE, GED and Level A and AA Testing. Slightly more than three percent of the New cases, 2.6 percent of the Existing cases and approximately one percent of the participants in the Restoration category are projected to ESL referral.

Registration Status. The GAIN participants in this study population with a Mandatory registration status have a predictably larger percentage (59.5%) projected to receive an educational referral compared to 53.1 percent of Voluntary participants.

Nearly 36 percent of Mandatory participants are projected for referral to ABE programs compared to 29 percent of participants with a Voluntary registration status. A greater percentage of Voluntary participants (22.6%) are projected for referral to GED

instruction compared to an estimated 19.8 percent of Mandatory participants. More than two percent of the Mandatory participants are projected for ESL referral compared to approximately one percent of the Voluntary participants. Finally, an estimated 1.6 percent of GAIN participants with a Mandatory registration status are expected to receive a referral to Level A/AA Testing compared with one-half of one percent (0.5%) of Voluntary participants.

These GAIN Appraisal results and educational referral projections have far reaching implications, providing the vehicle for basic skills evaluation as mandated in GAIN statutes and regulations. These results also assist program managers through the availability of a reliable demographic, educational and program profile of this GAIN study population.

The Basic Skills Certification Test was piloted this past year and the ESL Certification Test has progressed through the developmental and field testing stages with statewide implementation expected in the near future. As data collection efforts continue, this proves to be an exciting year with significant contributions to this dynamic GAIN database.

Chapter One:
GAIN Appraisal Program

GAIN LEGISLATION

The Greater Avenues for Independence (GAIN) Legislation, AB 2580 (Chapter 1025), enacted by the California Legislature in September 1985, contained a full range of employment-related training and supportive services designed to provide Aid to Families with Dependent Children (AFDC) program applicants and recipients with the skills needed to acquire unsubsidized employment. Education and job search and employment training were key components of this welfare reform legislation, the goal of which was to get welfare recipients into jobs which would keep them permanently out of the welfare system thus benefiting both the GAIN participants and the state welfare system. This mandatory program provided the avenue for AFDC and Refugee Cash Assistance (RCA) recipients to acquire the basic tools and necessary support services which would allow them to subsist on their own, namely self-confidence, job-seeking skills, education and training.

GAIN Implementation and Reporting

Responsibility for local implementation of the GAIN Legislation was at the county welfare department level with assistance from the California State Department of Social Services. Under state supervision, implementation at the county welfare department level was to occur gradually over a three-year period, beginning in June 1986. This is the fourth annual report addressing, though not limited to, the basic skills appraisal and educational referral components of the GAIN program.

This first chapter contains background information including the basic skills appraisal requirements inherent in the implementation process, properties of the assessment instruments which comprise the GAIN Appraisal Program and a description of pertinent GAIN program characteristics. It is provided to facilitate a better understanding of both

narrative and graphic presentations which follow in subsequent chapters and appendices to this report.

Initial Appraisal

GAIN regulations mandate that:

> The County Welfare Department shall determine if the registrant lacks basic literacy or mathematics skills or English language skills by using the appropriate testing instruments provided by the State Department of Social Services in conjunction with the State Department of Education. (*Manual of Policies and Procedures*, Sect. 42-761.361)

Assessment, therefore, has been integral to the GAIN program since its inception, providing the foundation upon which training and educational needs are identified and an employability plan is developed. Through a contract administered by the California State Department of Social Services in cooperation with the California Department of Education, tests were designed and developed by the Comprehensive Adult Student Assessment System (CASAS) to appraise the basic reading, math and functional listening comprehension skills of GAIN participants. Together these tests comprise the "GAIN Appraisal Program" which is described below.

TEST DEVELOPMENT

The GAIN Appraisal Program tests were developed from the CASAS Item Bank which consists of more than 5,000 test items and has been under continual development and refinement since 1980. The application of Item Response Theory (IRT) to these 5,000 items assigns a reliable index of standardized difficulty to each item. Assessment instruments developed from these items accurately measure basic skills in a functional context.

Psychometric Properties

CASAS' test item validity has withstood ongoing internal review and external evaluation since 1980. In conjunction with the development of the GAIN Appraisal Program, field testing was conducted from July to December 1986 to gather data regarding the psychometric properties of the GAIN Appraisal Program forms. Summary results were presented in the GAIN Appraisal Program Field Test Report (CASAS, 1987, pp. 5-6) and the GAIN II Report (CASAS, 1988). The GAIN Reading and Math Appraisal Forms 2 have been implemented since publication of the GAIN II Report, and their psychometric

properties have also been analyzed. The results were summarized in the GAIN III Report (CASAS, 1989) confirming that the instrumentation used in the GAIN Appraisal Test Forms 1 and 2 are internally consistent and accurate with the psychometric model used.

Psychometric Model. The psychometric theory underlying the development of the CASAS Item Bank and therefore the GAIN Appraisal instruments is commonly referred to as Item Response Theory (IRT). This measurement model standardizes or indexes the difficulty of test items in order to measure an individual's ability to read and compute in a pre-employment context. This model postulates that under certain conditions, item difficulty estimates are invariant; that is the standardized difficulties, unlike P-Values, are not dependent on the varying abilities of individual test respondents or samples of persons being tested. A measure of this invariance may be found in the correlation of the local difficulties to the established item bank difficulties. As this correlation approaches 1.00, confidence in the application of the psychometric model to the data set increases as does confidence in the application of the item bank difficulties to the population of examinees of interest.

Local to Bank Difficulty Correlations. In the case of the GAIN Reading Appraisal Form 1, the correlation between local to item bank difficulties was .81 and for the GAIN Reading Appraisal Form 2, the correlation was .89. For the GAIN Math Appraisal Form 1, the correlation between local to item bank difficulties was .85. A corresponding correlation was computed independently for Blacks, Caucasians, and Hispanics. For the GAIN Reading Appraisal Form 1, the respective correlations were .75, .81 and .80 and for Form 2, the respective correlations were .89, .84 and .91. For the GAIN Math Appraisal Form 1, the correlations were .85, .82 and .86 respectively and on the GAIN Math Appraisal Form 2 the correlations were .84, .76 and .83 respectively for Blacks, Caucasians and Hispanics. A correlation of .70 existed between Form 1 Reading and Math scale scores and a correlation of .76 existed between Form 2 Reading and Math scale scores. These correlations did not differ appreciably by gender or ethnicity.

Item-Total Correlations. Point-biserial correlation coefficients were obtained for the GAIN Reading and Math Appraisals. In the case of the GAIN Reading Appraisal Form 1, the coefficients ranged from .40 to .60 with a mean of .49. For the GAIN Reading Appraisal Form 2, point-biserial coefficients ranged from .43 to .77 with a mean of .63. Similarly, coefficients for the GAIN Math Appraisal Form 1 ranged from .24 to .63 with a mean of .51 and for the GAIN Math Appraisal Form 2, coefficients ranged from .48 to .65 with a mean of .58. For the GAIN Listening Appraisal, coefficients ranged from .38 to .61 and the mean point-biserial correlation coefficient was .53.

P-Values. The P-Value refers to the proportion of examinees passing an individual item and gives an index of difficulty for each item relative to the sample of persons tested. The P-values for the GAIN Reading Appraisal Form 1 ranged from .45 to .95 with an average P-Value of .77 indicating that an average of 77 percent of the examinees scored correctly on each item. For the GAIN Reading Appraisal Form 2, the P-Values ranged from .42 to .87 with an average value of .71. For the GAIN Math Appraisal Form 1, the P-Value ranged from .25 to .90 with an average P-Value of .56 and for the GAIN Math Appraisal Form 2, values ranged from .34 to .83 with an average P-Value of .53. The P-Values for the GAIN Listening Appraisal ranged from .24 to .71 with an average P-Value of .39.

Reliability. Computation of Kuder-Richardson (KR)-20 indices for GAIN Appraisal Reading and Math Appraisal Items indicated that in the case of GAIN Reading Appraisal Form 1, the (KR)-20 was .89, and for GAIN Reading Appraisal Form 2 the (KR)-20 was .94. The (KR)-20 computation for the GAIN Math Appraisal Form 1 was .86; Form 2 was .89. The (KR)-20 for the GAIN Listening Appraisal was .76.

Field Testing

Field testing of the GAIN Appraisal Program tests was conducted from July to December, 1986. Site visits and technical assistance were provided by CASAS and state personnel to gather data regarding the psychometric properties of the test forms and also assist in identifying initial operational problems. County test administration procedures such as proper and efficient test administration, testing conditions, and scoring and interpretation of tests were addressed.

GAIN APPRAISAL PROGRAM

The following tests which assess a participant's level of skill in reading comprehension, basic mathematics computation and basic listening are part of the GAIN Appraisal Program.

The GAIN Reading Appraisal. The GAIN Reading Appraisal assesses a participant's ability to apply basic reading skills in a functional or "life-skills" context. The Reading Appraisal consists of thirty multiple-choice items.

The GAIN Math Appraisal. The GAIN Math Appraisal consists of twenty multiple-choice items which assess a participant's ability to perform basic math computation and to apply basic math skills in a functional or "life-skills" context.

An alternate form of both the GAIN Reading and Math Appraisal (Forms 2) have also been developed for use in the event an alternative testing instrument is needed.

The GAIN Listening Appraisal. The GAIN Listening Appraisal consists of twelve multiple-choice items designed to assess a participant's listening comprehension in a functional or "life- skills" context. This test is intended for and administered only to those GAIN participants who have been evaluated as having limited proficiency in English. Further information regarding the GAIN Listening Appraisal is found in Appendix B.

In addition to the GAIN Appraisal Tests described above, Level A and AA tests are used to assess the basic skills of participants demonstrating lower levels of proficiency or functional literacy. These tests are administered when a participant scores below a 200 scale score in reading or otherwise indicates a possible learning difficulty. Further information regarding the Level A and AA Tests is found in Appendix C.

These CASAS tests were developed in accordance with the GAIN regulatory mandate. On the basis of test results, participants lacking basic reading, mathematics or English language skills shall have provisions for obtaining these skills incorporated into their GAIN participant contract. Referral criteria to Adult Basic Education (ABE), English as a Second Language (ESL), or General Education Development (GED) instruction are found in Chapter 4, Table 4.5.

Scale Score Interpretation

CASAS assessment instruments have been widely used. To date, more than 800,000 participants have been assessed in diverse program settings and geographic regions. An estimated 300,000 welfare recipients, both in the GAIN program in California and nationally in programs similar to GAIN, have been assessed using CASAS instruments. Based upon this extensive experience and corresponding database, the following levels of achievement have been determined.

Test Score Characteristics

Below 200. Adults scoring below a 200 scale score (Beginning ABE/ESL) have difficulty with the basic literacy and computational skills necessary to function in an employment setting and/or in the community. These adults can handle routine, entry-level jobs but are often limited to jobs requiring only the most basic oral communication in a setting in which all tasks can be demonstrated. These adults have difficulty providing basic personal identification in written form, are not able to compute wages and deductions on paychecks, and cannot follow basic written directions or safety procedures.

200 through 214. Adults scoring between 200 and 214 scale scores can function in intermediate level ABE and ESL programs requiring minimal literacy skills. They are able to satisfy basic survival needs and some limited social demands. Adults scoring at this level can function in entry-level jobs that require simple oral communication skills where performance tasks are demonstrated. They can provide some basic written information and perform only basic computation.

215 through 224. Adults scoring between 215 and 224 scale scores are functioning above a basic literacy level and are considered to be at an advanced ABE/ESL level. They are able to perform basic literacy tasks and computational skills in a functional employment setting. They are generally able to function in jobs or job training that involves following oral and written instructions and diagrams. They usually have difficulty following more complex sets of directions.

225 and Above. Adults scoring at or above a 225 scale score can generally perform at a high school entry level in basic reading or math. They can profit from instruction in GED preparation and have a high probability of passing the GED test in a short time, if they do not have a high school diploma. They can usually perform work that involves following oral and written directions in familiar and some unfamiliar situations.

Test score performance is used in conjunction with other participant information (i.e., educational background) in the GAIN educational referral process. Limited English proficient participants who speak no English or score below 215 on the GAIN Appraisal Listening Test, for example, are referred to ESL instruction. Additional information regarding the referral process is found in Table 4.5.

PARTICIPANT CATEGORY INFORMATION

In March 1987, GAIN-implementing counties began collecting Participant Aid category information from participants taking the GAIN Reading and Math Appraisals. Counties were additionally asked to indicate whether participant referrals to ESL programs were based upon test score performance below a 215 scale score on the GAIN Listening Appraisal or whether referrals were made without testing. The addition of the ESL referral field to the GAIN Appraisal data collection instruments has provided valuable information to program managers, allowing them to identify the number of referrals to ESL programs and to collect descriptive demographic information. Data in this report are presented for each category of GAIN participant where appropriate. These categories are briefly summarized below.

AFDC Aid Category Information

AFDC-Family Group (AFDC-FG). This category is comprised of a family group in which the child is deprived because of absence, incapacity or death of one parent. Cases in this aid category are typically female-headed households.

AFDC-Unemployed Parent (AFDC-U). This category includes a family group in which the child is deprived because of the unemployment of a parent living in the home. The majority of cases in this aid category are two-parent households where the father is the principal wage earner and unemployed.

Refugee Cash Assistance (RCA). This program provides federally-funded assistance for refugees in their first twelve months in the country who are not otherwise eligible for any other cash assistance program.

General Relief/General Assistance (GR). The purpose of this program is to provide assistance to all indigents who are residents of the state of California whose needs are not otherwise met, who are not eligible for any other public assistance program, and who are actively seeking employment or are unemployable.

Aid Status

The Aid Status of participants is divided into three categories: New, Existing and Restoration. A New case is one who has received aid within the previous 12 months; an Existing case is a participant who was receiving aid upon GAIN implementation in the county; a Restoration case is an applicant who received aid within the last 12 months and is reapplying. Analyses of participants by Aid Status will focus primarily on New and Existing cases because they comprise the majority of available Aid Status data. Existing cases are of particular interest because they are thought to be more representative of the "long-term" aid recipient who thus may require additional educational and support services to make the transition to unsubsidized employment.

Registration Status

Upon registration in GAIN, participants are classified as Mandatory or Voluntary. All AFDC applicants are considered Mandatory registrants for GAIN unless otherwise exempt. (For a complete description of exemption criteria, see GAIN implementing regulations, *Manual of Policies and Procedures*, Section 42-799, California State Department of Social Services, 1989.) Persons who are exempt from participation may, under certain conditions, participate in GAIN on a voluntary basis.

Collection of data in these participant categories provides comparative information and the opportunity to analyze and report the demographic and basic skills characteristics of a given participant category versus another, thus creating a more comprehensive profile of the GAIN participant caseload. The continued collection of these data provide valuable insight regarding the functional skills and demographic characteristics of significant subpopulations within AFDC, Aid and Registration Status categories.

SCOPE OF THIS REPORT

Data for this report were collected from 191,863 GAIN clients throughout the 58 counties in California for the time period from July 1986 through April 1990. It is important to note that:

- implementation at the county level has been gradual;
- answer sheets used in data collection have been modified over time in recognition of evolving operational needs; and
- submitted answer sheets are not always complete.

The data reported, therefore, represent the number of clients for whom data are available rather than the total GAIN enrollment in any given county or in the GAIN Program as a whole. Data presented herein update the GAIN III Report and any significant departures from GAIN III are highlighted.

As with any data, caution should be exercised in interpretation. Where implementation rates have lagged behind in some of the largest, most demographically diverse counties over time, those counties are underrepresented in this study population, limiting generalization of findings to the larger GAIN population.

The next chapter presents a profile of the demographic, educational and program characteristics of participants. Chapter Three provides test score performance. Finally, Chapter Four presents summary test score findings integrating the information presented in the two preceding chapters with educational referral projections.

There are four appendices to this report. Appendix A contains sample GAIN Appraisal data collection instruments. Appendices B and C provide information regarding the GAIN Listening Appraisal and Level A and Level AA Tests. Appendix D concludes the appendices section, providing information regarding the Basic Skills Certification Test pilot study which took place during this past year.

Chapter Two:
Demographic, Educational and Program Characteristics

The demographic, educational and program-specific characteristics of individual GAIN program participants are captured in the data collection process on various GAIN answer sheets. (See Appendix A.) Individual data are subsequently aggregated and reported annually. The data presented in this chapter are cumulative, updating the information contained in GAIN III by 70,358 participants for the time period May 1989 through April 1990. The cumulative data presented, therefore, represent the population of GAIN participants for whom data are available for the time period July 1986 through April 1990 (N=191,863).

This chapter initially presents a demographic profile of GAIN participants in this study population including county of residence, gender, age, ethnic background and native language. Following the demographic profile, educational characteristics of GAIN participants are presented including the highest grade level completed and diploma/degree earned along with information, where available, regarding whether participants last attended school in California or elsewhere. Concluding this chapter is a presentation of program-specific characteristics of participants pertaining to their aid category (AFDC-FG, AFDC-U, RCA, GR), aid status (New, Existing, Restoration) and registration status (Mandatory, Voluntary).

DEMOGRAPHIC CHARACTERISTICS

County of Residence. All 58 counties in California are represented to some extent in this study population of GAIN participants. The proportional contribution of each is dynamic, relative to implementation rates rather than to the size of the GAIN population in any given county. With this in mind, Figure 2.1 presents the percentage contribution by county for 20 counties. The remaining 38 counties are aggregated into the Other category, each representing less than or equal to 1.5 percent of the study population.

As illustrated in Figure 2.1, the three counties with the greatest number of GAIN participants are San Diego, Fresno and Santa Clara representing 18.2, 7.5, and 7.0 percent respectively of this study population. A sizeable increase in the number of GAIN participants from Riverside, Sacramento, San Joaquin, and Los Angeles counties is seen in this 1989-90 study population over prior reporting years.

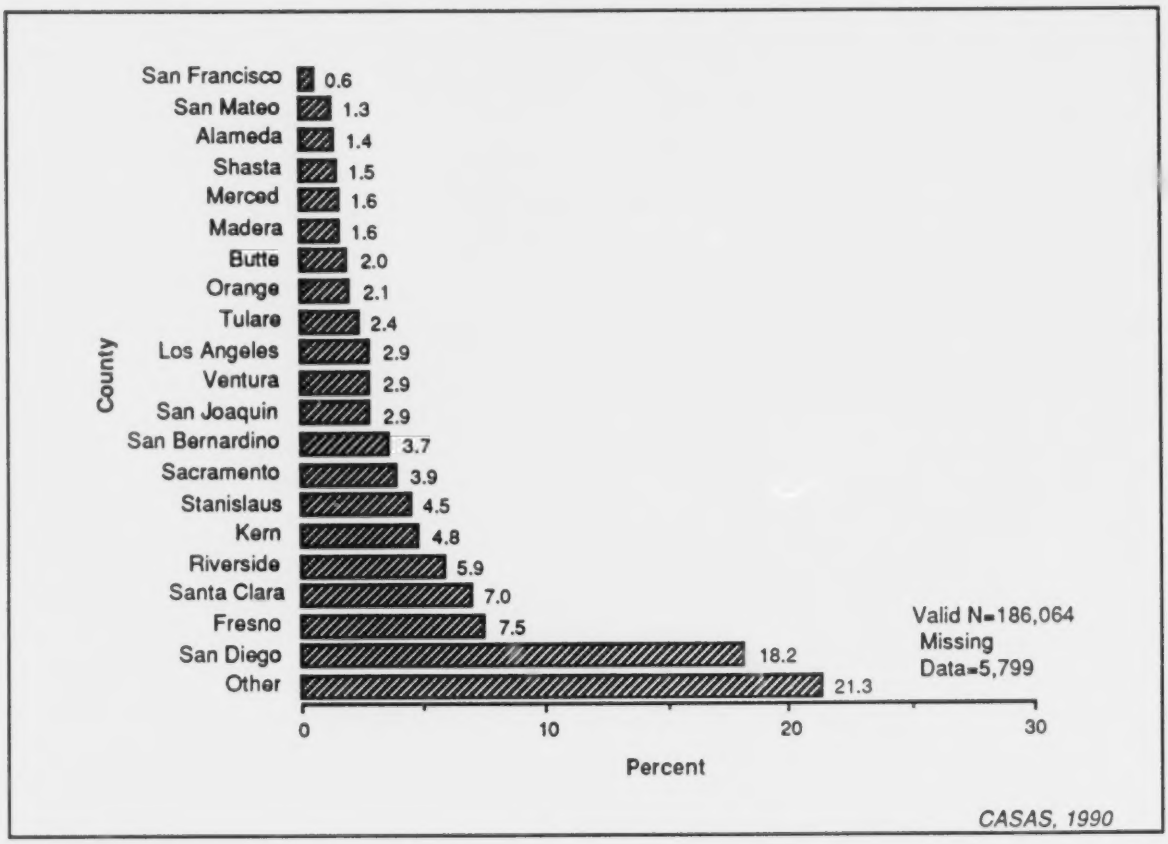

Figure 2.1 — County of Residence

Gender. As presented in Figure 2.2, a decided majority of the GAIN participants in this study population are Female. The gender composition of this study population is 64.2 percent Female and 35.8 percent Male.

The changing gender make-up of this study population in this 1989-90 reporting period is indicative of the overall dynamic nature of the data. At the end of the three reporting years, approximately 58 percent of our study population was Female and 42 percent was Male. Also noteworthy is the apparent departure from the gender composition of the overall study population in two ethnic categories as discussed later in this chapter.

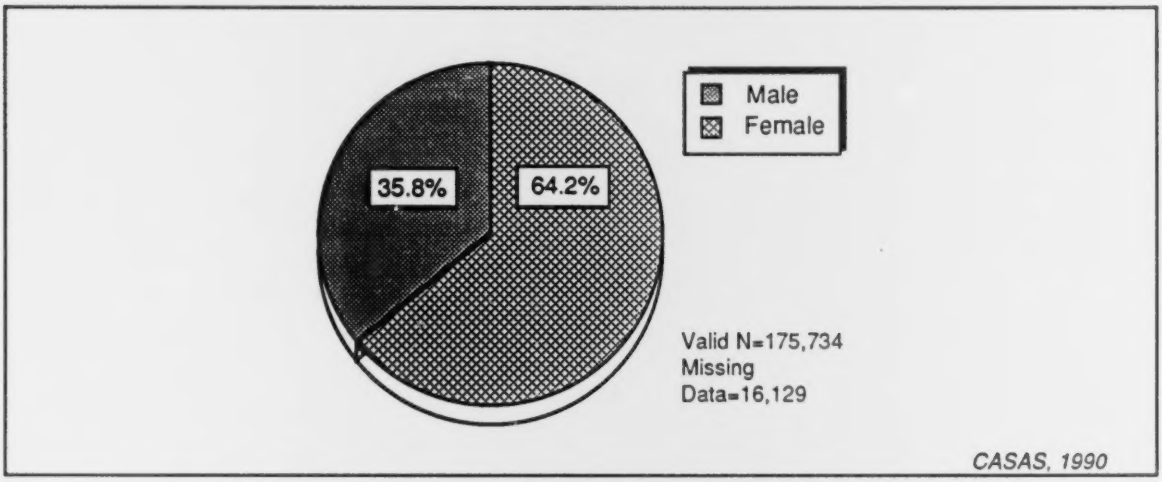

Figure 2.2 — Gender (Total Population)

Age. The age of GAIN participants in this study population is recorded on the appropriate answer sheet in one of ten age categories. These are represented in Figure 2.3. More than two-thirds (67.4%) of the GAIN participants in this study population are less than 35 years of age and nearly half (48.6%) are age 25 to 35. Approximately 30 percent are between the ages of 35 and 50 years old and only three percent are 50 years and older. The age 45 and over category comprises 6.8 percent of this GAIN study population. A comparison of age categories by ethnic background is found in Figure 2.6.

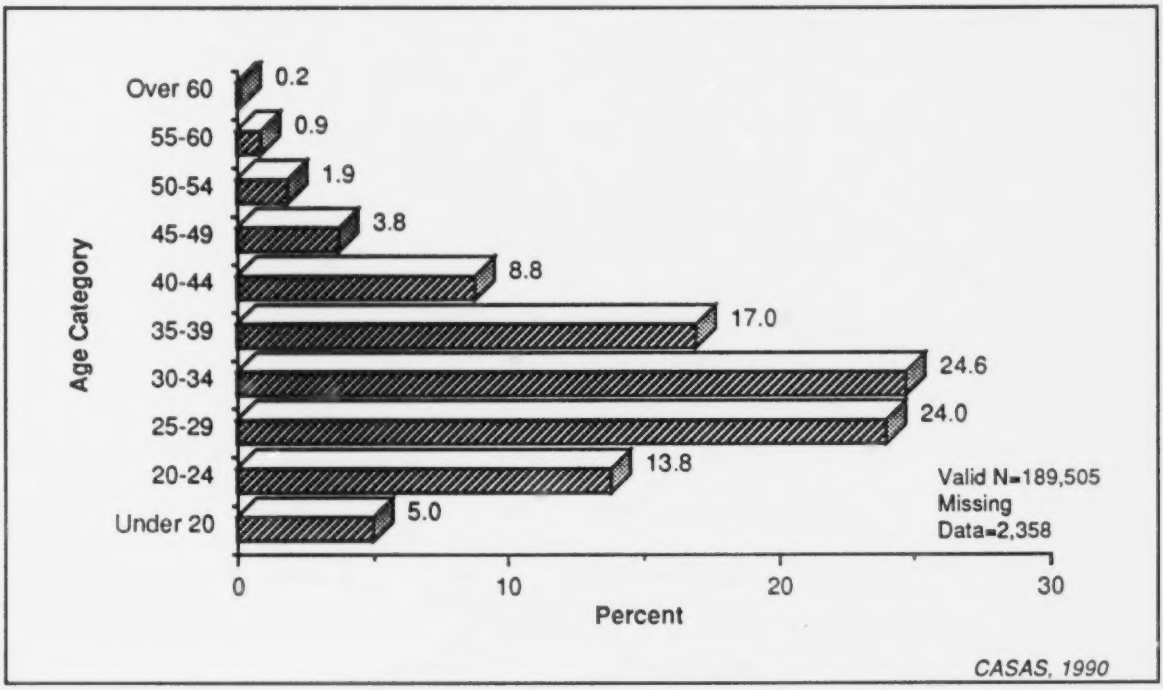

Figure 2.3 — Age (Total Population)

Ethnic Background. The ethnic background of GAIN participants is recorded on the appropriate answer sheet in one of nine categories. These are presented in Figure 2.4. Three ethnic categories account for 86.5 percent of this study population, namely Caucasian (44.7%), Hispanic (25.3%) and Black (16.5%). The remaining categories which together comprise 13.5 percent of this study population are Indo-Chinese (4.2%), Native American (3.6%), Asian (2.5%), Filipino (0.7%), Pacific Islander (0.6%) and Other (1.9%). These ethnic categories are further described in conjunction with the age and gender of participants in this GAIN study population.

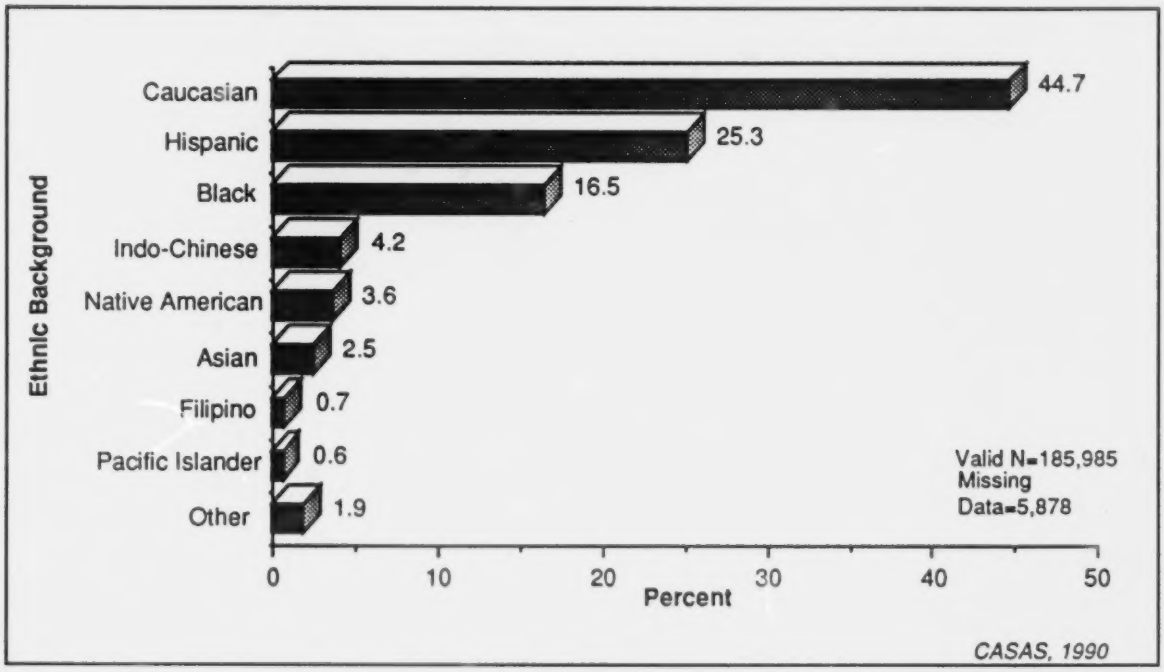

Figure 2.4 — Ethnic Background

Gender by Ethnic Background

As presented in Figure 2.5, differences are identified in the predominance of Males vs Females in the various ethnic categories. A greater percentage of Males is found in the Asian and Indo-Chinese subpopulations whereas females are more prominently represented in all other ethnic subpopulations.

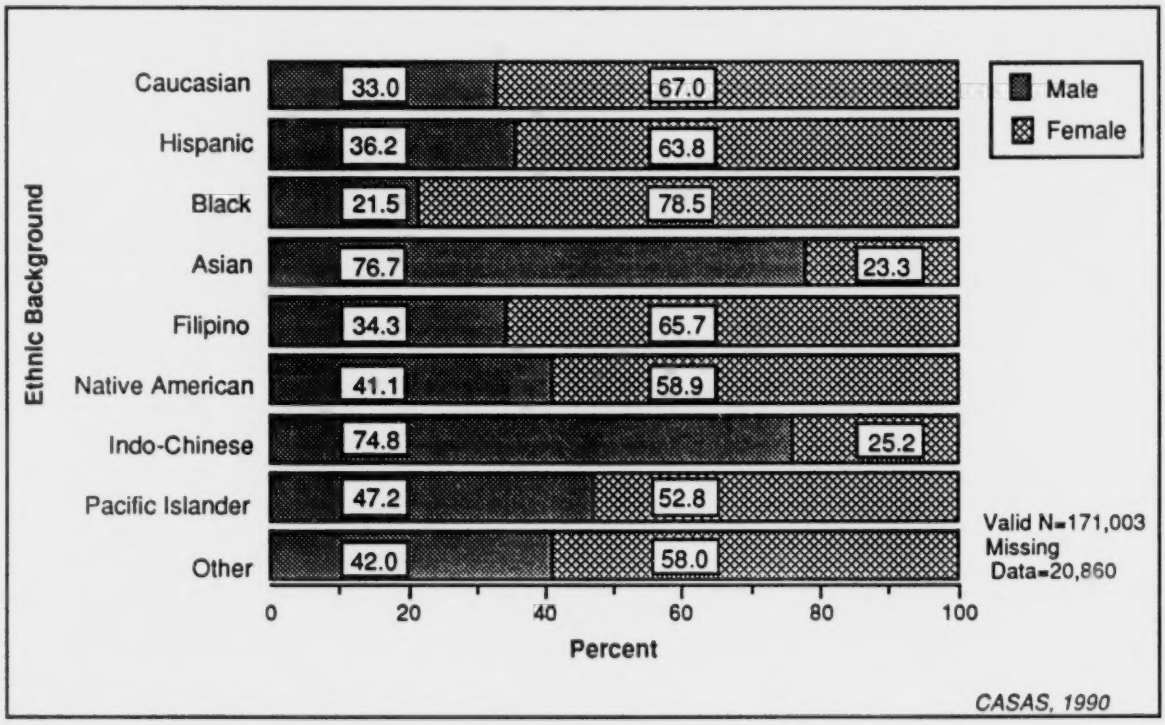

Figure 2.5 — Gender by Ethnicity

Age by Ethnic Background

Age differences from the larger study population are also identified by ethnic category. Approximately 43 percent of the Asians in this study population are age 35 and older as are approximately 41 percent of Filipinos. The greatest difference is seen in the Indo-Chinese sub-population where 61.5 percent are 35 and older and only 38.5 percent are less than 35 years of age. (See Figure 2.6.)

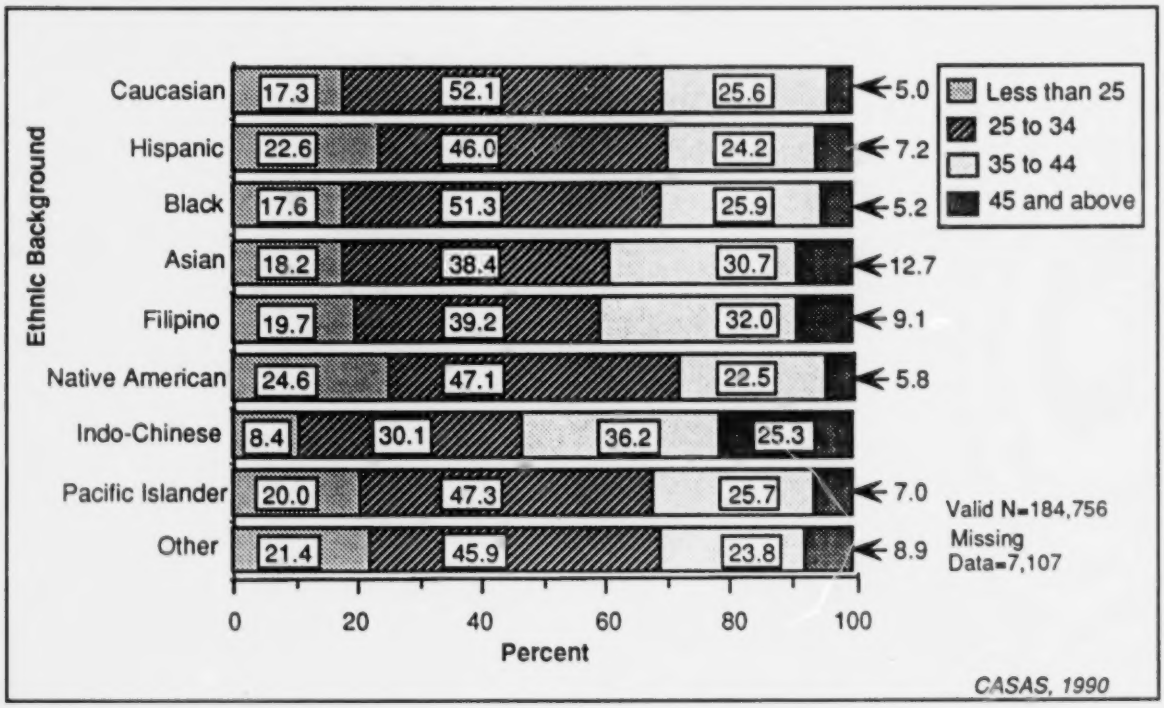

Figure 2.6 — Age by Ethnic Background

Native Language. The native language of GAIN participants in this study population is recorded on the appropriate answer sheet in one of ten categories. Two languages, specifically English and Spanish, account for more than 92 percent of the total reported. As presented in Figure 2.7, 83.7 percent of the GAIN participants in this study population reported English as their native language. Although Hispanics comprise nearly 25 percent of this study population, only 8.4 percent of this study population identified Spanish as their native language.

Seven languages and an Other category combine to account for the remaining 7.9 percent of the native languages reported by this GAIN population. Of these, the following three categories comprise 5.2 percent of the native languages: Vietnamese (2.7%), Laotian (1.5%), and Cambodian (1.0%). Finally, Korean, Chinese, Japanese and Tagalog together comprise less than one percent of the native languages identified by the GAIN participants in this study population and are included in the Other (2.7%) category.

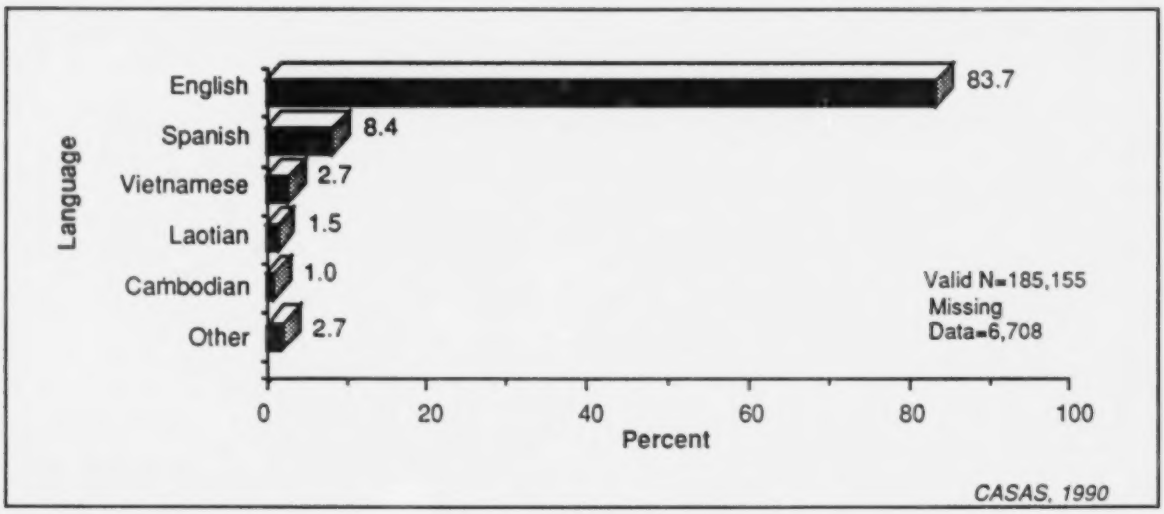

Figure 2.7 — Native Language

EDUCATIONAL CHARACTERISTICS

Highest Grade Completed. The GAIN participants in this study population are asked to identify their highest grade completed. As presented in Figure 2.8, the range reported (based on 184,815 participants) was from Grade 0 through Grade 18. Approximately seven percent completed 0-6 years; six percent completed 7-8 years; and 42 percent completed 9-11 years of school. Altogether, more than one-half (55%) of the participants in this GAIN study population have completed less than 12 years of education. Approximately one-third of the participants completed 12 years of school and slightly more than 11 percent completed greater than 12 years of school. While the modal number of years completed was 12, the mean or average was less than 11 (10.75).

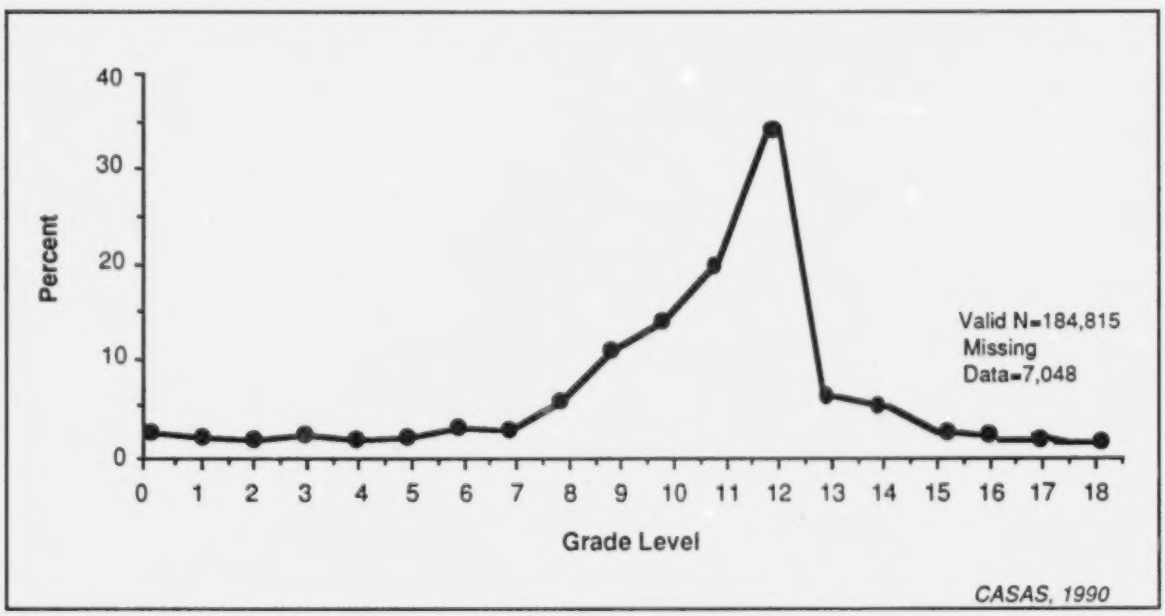

Figure 2.8 — Highest Grade Completed

Diploma/Degree Awarded. More than one-half (53.5%) of the GAIN participants in this study population reported earning a diploma/degree of some kind. As pointed out in Figure 2.9, approximately 46 percent reported earning a High School Diploma or equivalent (General Educational Development/California High School Proficiency Exam) and another 46.5 percent reported that they had not earned a diploma/degree of any kind. The remaining eight percent reported having earned either a Technical, Associate of Arts (AA), or Four Year Degree.

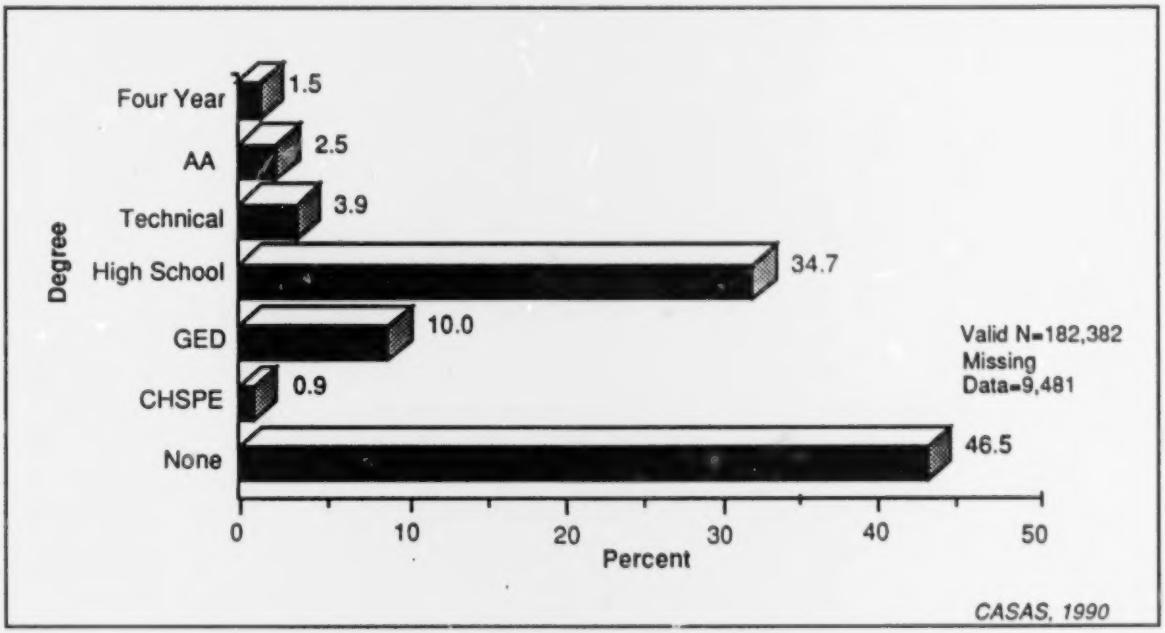

Figure 2.9 — Highest Degree Awarded

Location of Last School Attended. As presented in Figure 2.10, data regarding whether the last school attended (high school or below) by participants in this study population was in California or not are available for only approximately 31 percent of this GAIN population (N=59,770). Of those participants for whom data are available, approximately 69.1 percent reported that the last school they attended (high school or below) was in California.

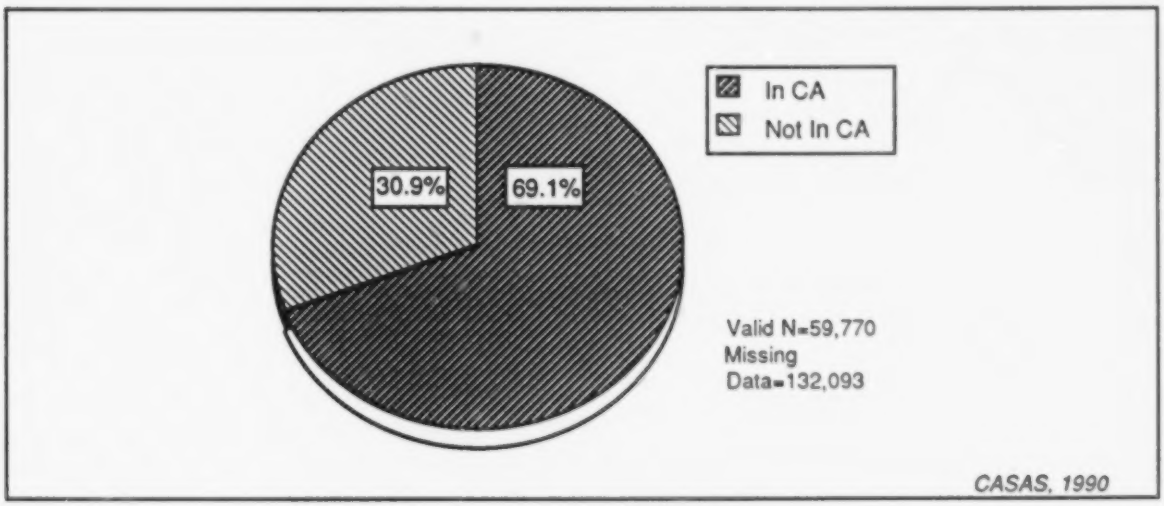

Figure 2.10 — Location of Last School Attended

The majority of Caucasians, Hispanics, Blacks, Filipinos, Native Americans and Pacific Islanders reported that their last school attended (high school or below) was in California compared to 67.6 percent of Asians and 86.4 percent of Indo-Chinese participants who reported attendance out of state. (See Figure 2.11.)

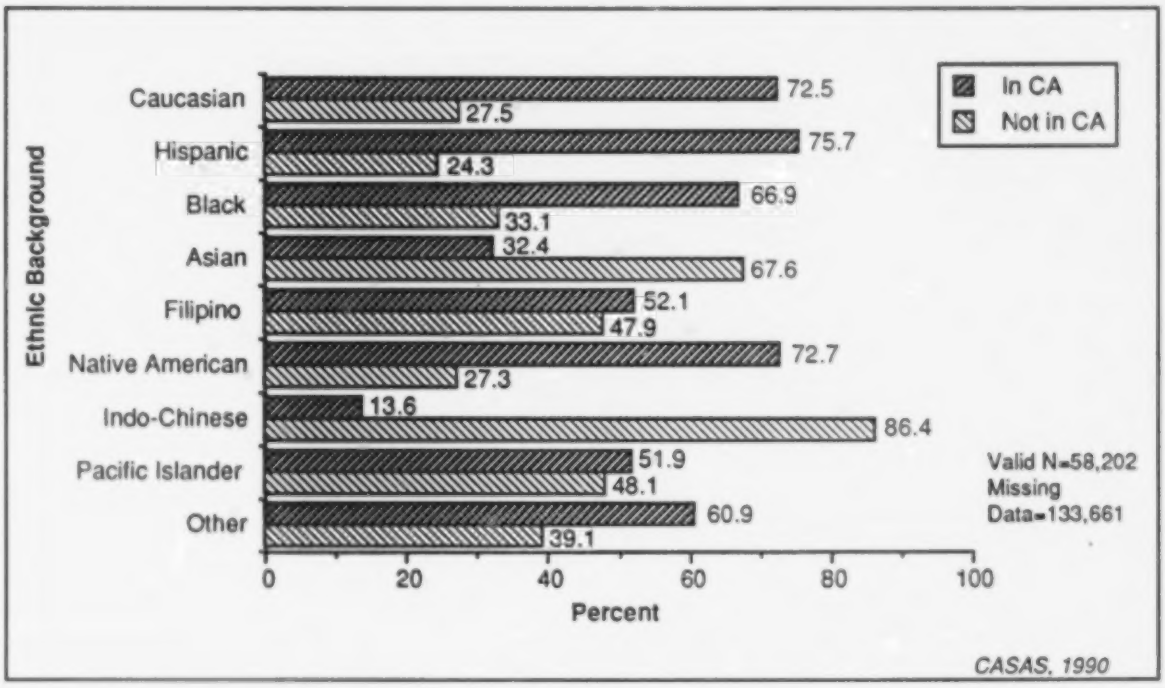

Figure 2.11 — Location of Last School Attended by Ethnic Background

PROGRAM CHARACTERISTICS

Aid Category. GAIN participants are are classified into one of four aid categories including AFDC-Family Group (AFDC-FG), AFDC-Unemployed Parent (AFDC-U), Refugee Cash Assistance (RCA), or General Relief/General Assistance (GR). Counties began collecting this information in March 1987 and data are available for approximately 65 percent of this study population (N=121,786). Where data are available, nearly 70 percent (68.8%) are AFDC-FG and the remaining 31.2 percent are predominantly AFDC-U. The RCA and GR categories combined comprise approximately one-half of one percent of this GAIN study population. (See Figure 2.12.) Further information regarding Aid Category and demographic and educational characteristics is provided following Registration Status data.

Aid Status. In addition to aid category, GAIN participants are classified according to aid status as either a New, Existing or Restoration Case. As presented in Figure 2.12, data are available for approximately 65 percent of this study population (N=123,910). New and Existing Cases each account for approximately 47 percent of those for whom data are available. The remaining 6.3 percent are Restoration Cases.

Registration Status. Data regarding GAIN participants' registration status as either Mandatory or Voluntary is available for approximately two-thirds of this study population (N=127,830). As presented in Figure 2.12, the majority (84.6%) of the participants in this study population have a Mandatory registration status.

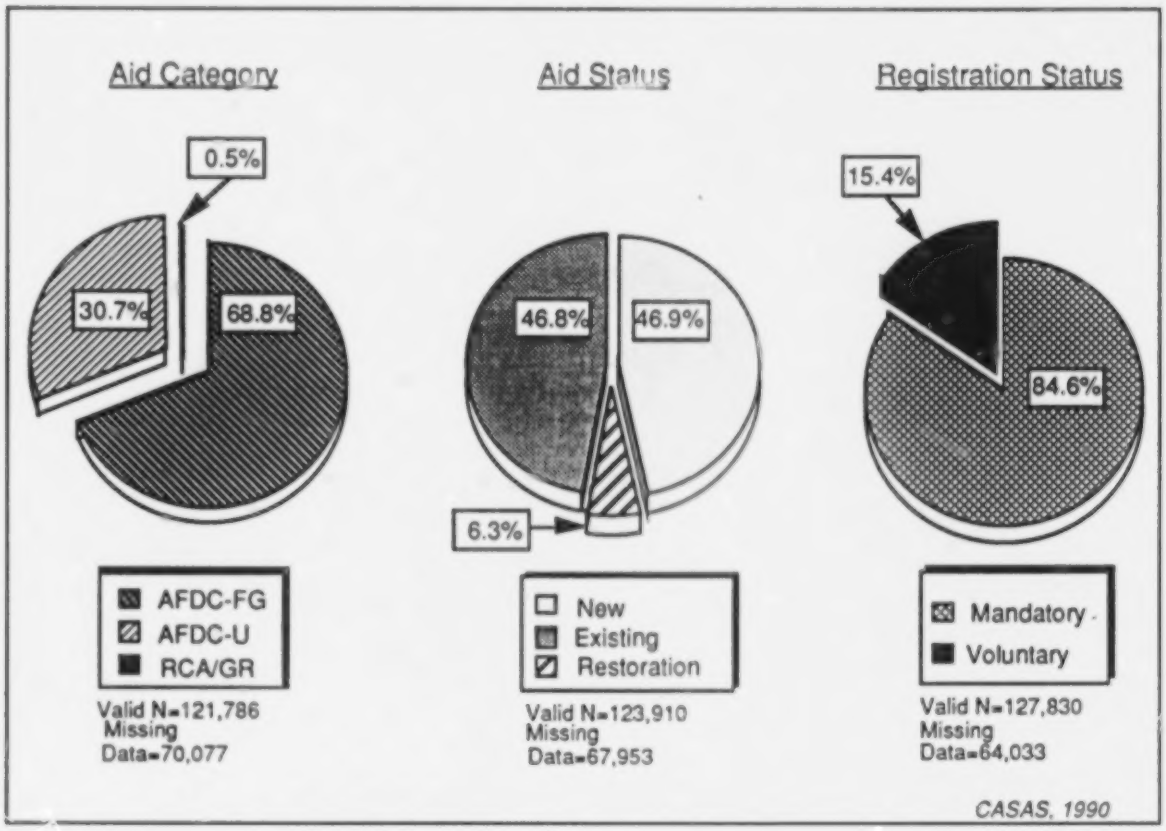

Figure 2.12 — Aid Category, Aid Status and Registration Status

Aid Category by Demographic, Educational and Program Characteristics

Information regarding select demographic, educational and program characteristics is provided by Aid Category for use in GAIN program planning. (See Figure 2.13.)

Information regarding the RCA and GR categories, although not graphically presented because of size, is included in the following narrative.

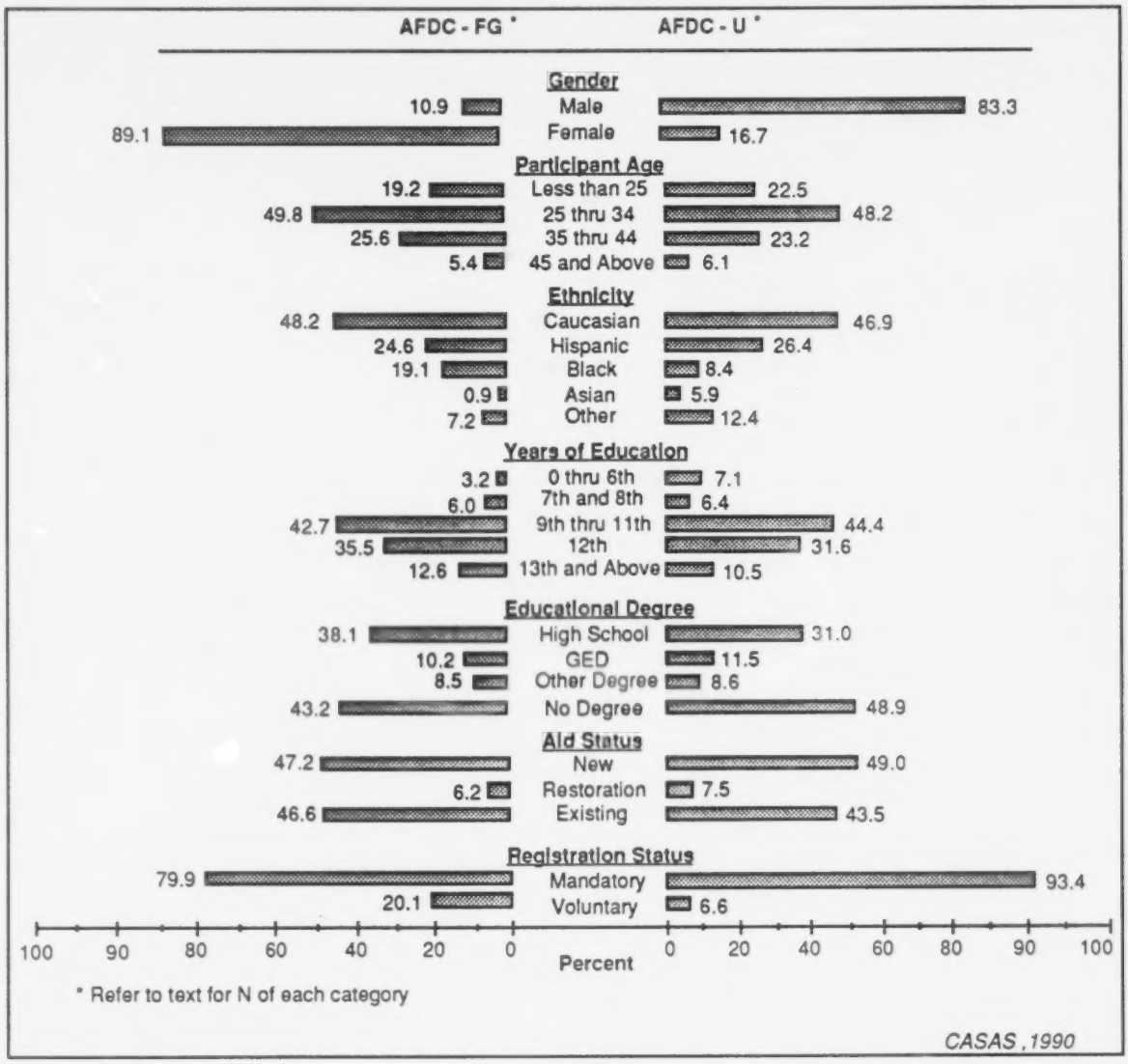

Figure 2.13 — Demographic, Educational and Program Characteristics by AFDC Category

Compared to the overall GAIN study population (approximately 64% female, 36% male), participants in the AFDC-FG aid category are predominantly female (89.1%), and participants in the AFDC-U category are predominantly male (83.3%). The age distribution within these two largest aid categories presented above is fairly similar to the overall study population.

Several differences in ethnic background, however, were identified. Only 29 percent of participants in the GR category are Caucasian compared to 48.2 percent in the AFDC-FG and 46.9 percent in the AFDC-U category and 45 percent in the overall study population. Approximately 31 percent in both the RCA and GR aid categories are Hispanic compared to approximately 25 percent Hispanic in the two AFDC aid categories. Only 8.4 percent in the AFDC-U and 10.2 percent in the RCA category are Black compared to 17 percent of the participants in the overall study population and 19.1 percent in the AFDC-FG category.

While Asians comprise approximately 2.5 percent overall, the percentage of Asians in the AFDC-FG, AFDC-U and RCA categories were approximately one, six and 10.7 percent respectively. Less than one percent in all ethnic categories were Filipino with the exception of the 2.6 percent Filipinos in the GR category. The percentage of Pacific Islanders and Native Americans was fairly similar in all aid categories.

Regarding years of education, the AFDC-FG category had a smaller percentage of participants completing 0-6 years of school (3.2%) compared to greater than seven percent (7.1%) of the AFDC-U participants.The AFDC-FG category also had a greater percentage (48.1%) of participants who completed 12 or more years of education compared to 42 percent of the participants in the AFDC-U category.

Nearly 57 percent (56.8%) of the AFDC-FG participants earned a degree of some kind compared to approximately 53 percent of the overall study population and 51 percent of the participants in the AFDC-U category.

Finally, the most appreciable difference between the two AFDC categories relative to aid and registration status is the 20.1 percent of Voluntary participants in the AFDC-FG category compared with 15.4 percent Voluntary in the overall study population and 6.6 percent in the AFDC-U category.

SUMMARY

The data presented in this chapter are cumulative, providing a profile of the GAIN study population for the time period from July 1986 through April 1990 (N=191,863). All 58 California counties are represented in this dynamic database, with program implementation rates rather than program size determining the proportional contribution of each county. As increases in data provided by those counties which have been underrepre-

sented in this study population are realized, so too will the potential for generalization of these findings to the larger welfare population. The following chapter builds upon this information, presenting test score performance in conjunction with the demographic, educational and program characteristics.

Chapter Three:
Test Score Performance

Assessment of GAIN participants' basic reading, mathematics and English language skills is an integral component of the GAIN Appraisal process, providing the foundation upon which training and educational needs are identified and an employability plan developed. The GAIN Appraisal assessment instruments include the GAIN Reading Appraisal, the GAIN Math Appraisal, the GAIN Listening Appraisal and Level A and AA Achievement Tests.

Unless otherwise indicated, the GAIN Reading Appraisal and GAIN Math Appraisal are administered to participants to assess their basic reading comprehension and basic math skills in a functional or "life-skills" context. The GAIN Listening Appraisal is administered only to individuals with limited English language proficiency, and Level A and Level AA Tests are administered to participants with test scores below 200 on the GAIN Reading and/or Math Appraisal .

This chapter focuses on the test score performance on the Reading and Math Appraisal taken by the majority of GAIN participants. Descriptions of these assessment instruments and test score characteristics are found in Chapter One of this report. Further descriptive information as well as test score performance on the Listening and Levels A and AA Tests is found in Appendices B and C.

GAIN Reading and Math Appraisal data are based on test score performance of 182,112 participants for the time period from July 1986 through April 1990. Test score performance is presented relative to the demographic, educational and program characteristics outlined in Chapter Two. Differences from and similarities to prior years' test score findings are highlighted.

GAIN READING APPRAISAL SCORES

Reading test score performance was nearly identical to that reported in GAIN III. As presented in Figure 3.1, approximately 76 percent of this GAIN study population scored at or above a 225 scale score and nearly 14 percent achieved a scale score of 215 through 224. Approximately 10 percent had a scale score below 215 and two percent had a scale score below 200. The mean reading scale score was 233.3, slightly higher than the GAIN III mean reading score of 231.6.

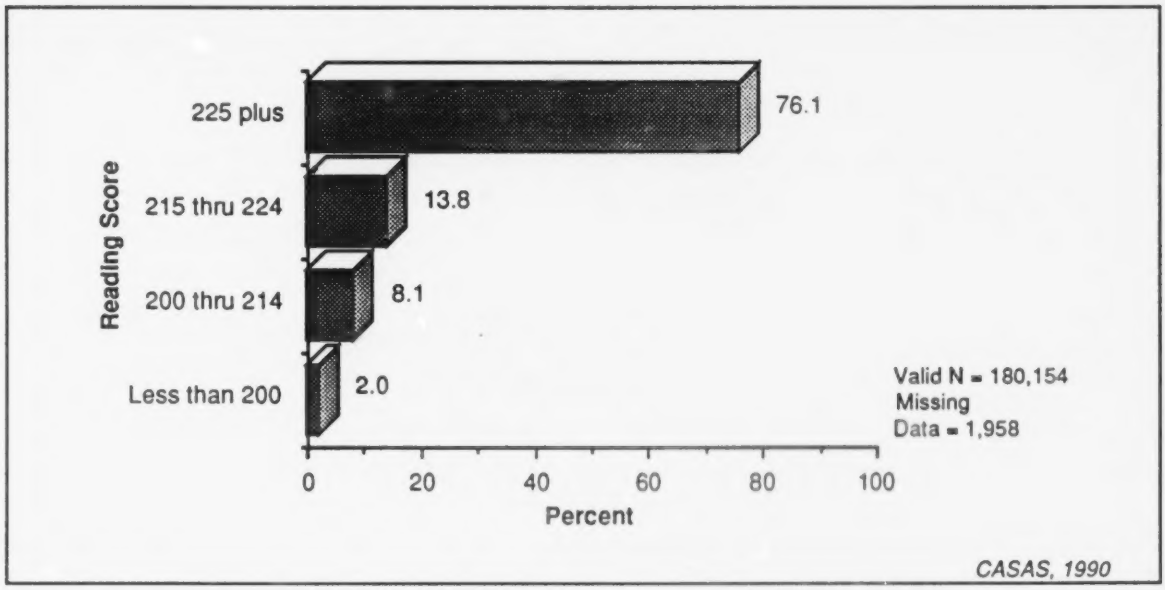

Figure 3.1 — Reading Appraisal Scores

Reading Appraisal Scores by Gender

A comparison of reading test score performance by Gender is presented in Figure 3.2. Approximately 70 percent of the males achieved a scale score of 225 and above compared to 80 percent of the females. Nearly 16 percent of the males scored at the 215 through 224 level compared to 12.5 percent of the females.

Males had nearly twice the percentage (13.7%) scoring below 215 compared to females (7.5%). Only 1.3 percent of the females had a scale score below 200 whereas 2.9 percent of the males scored at this level. The mean reading scale score was 230.9 for males and 234.7 for females. These rather pronounced gender differences in reading test score performance are similar to those reported in GAIN III.

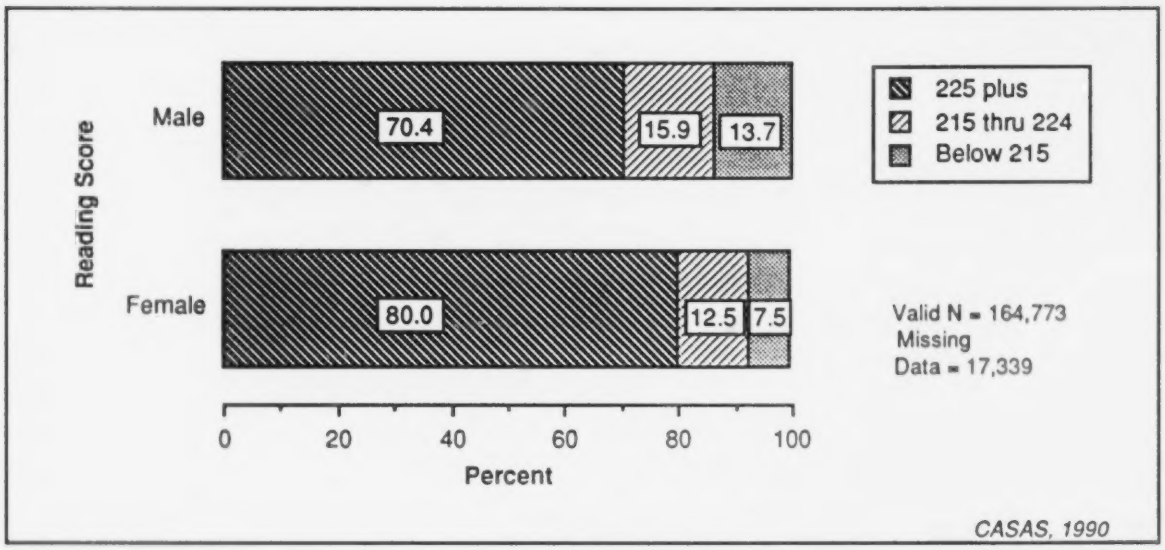

Figure 3.2 — Reading Appraisal Scores by Gender

Reading Appraisal Scores by Age

From 74 to 79 percent in each age category scored at the 225 and above scale score level with the exception of participants age 45 and over. In the age 45 and over category, only 57.6 percent achieved a scale score at the 225 and above level on the GAIN Reading Appraisal. At the lower end of the scale score range, a linear relationship existed between reading test scores and age category. As presented in Figure 3.3, the percentage of participants in each age category scoring below a 215 scale score on the reading test increased with age. More than three times the percentage of participants age 45 and over scored below 215 compared to those under 25 years of age, 23.5 and 7.3 percent respectively.

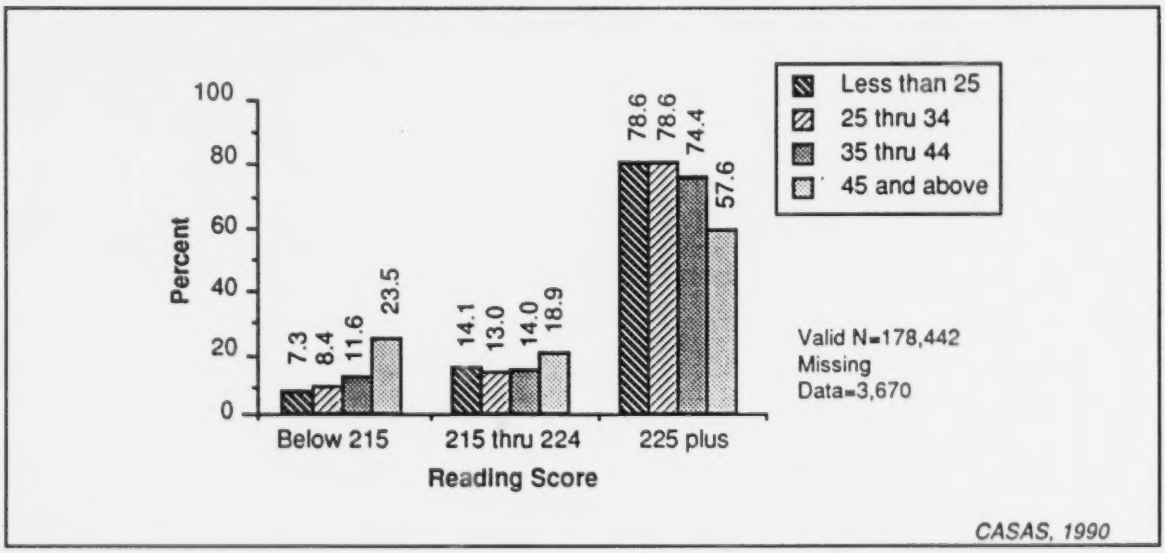

Figure 3.3 — Reading Appraisal Scores by Age

Reading Appraisal Scores by Ethnic Background

Reading test score performance by ethnic background data are available for 175,005 GAIN clients in this study population. Some rather pronounced differences in reading test score performance are presented in Figure 3.4. Nearly 90 percent of the Caucasians in this study population scored at the 225 and above level compared to approximately 30 and 35 percent respectively of the Indo-Chinese and Asians. The percentage of the remaining ethnic groups scoring at the 225 and above level ranged from 61 to 71 percent. Approximately three percent of the Caucasians in this study population scored below 215 compared to approximately 42 and 47 percent respectively of the Asians and Indo-Chinese. Eleven to 15 percent of the participants in the remaining ethnic groups and nearly 20 percent in the Other category scored below 215.

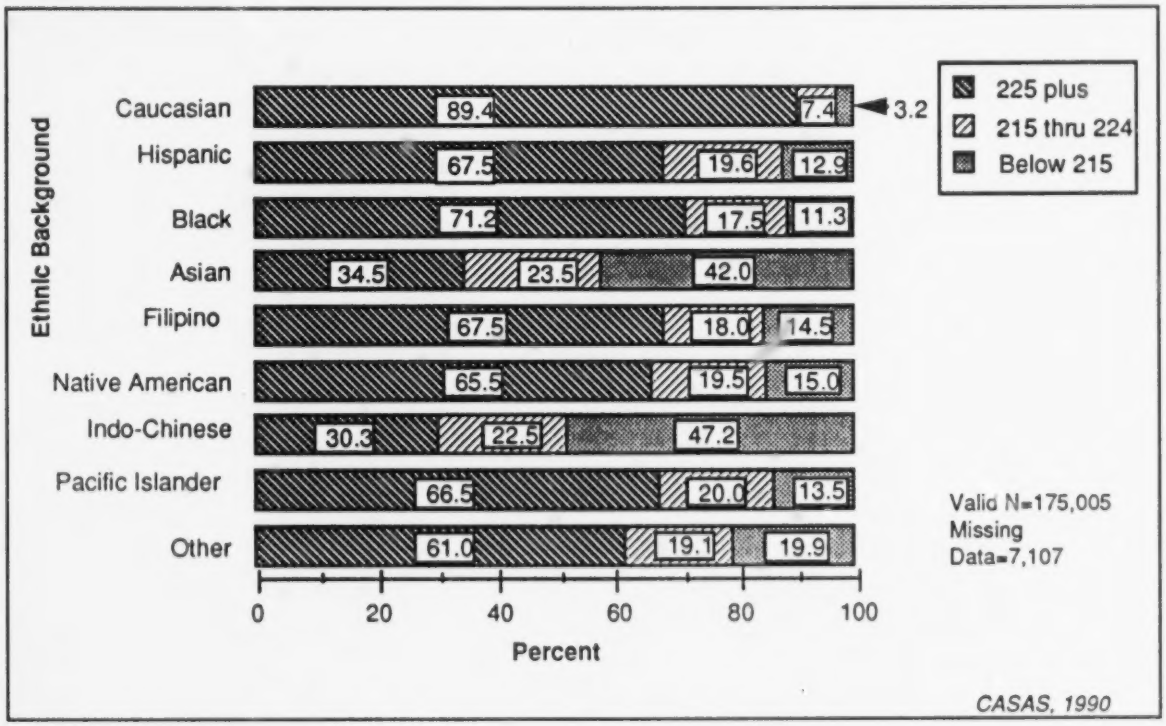

Figure 3.4 — Reading Appraisal Scores by Ethnicity

Compared to the overall mean reading scale score (233.3) for this study population, the mean scale score by ethnic background ranged from 215.8 (Indo-Chinese) to 239.1 (Caucasian). Mean scale scores, in fact, are lower than the overall mean not only for

Indo-Chinese but also for Asians (218.4), Hispanics (229.2), Native Americans (229.3), Pacific Islanders (229.8), Filipinos (230.4), and Blacks (230.6).

Reading Appraisal Scores by Native Language

Based on data for 174,255 GAIN clients in this study population, a relationship between native English language and reading test score performance was identified. A higher percentage of participants (81.0%) who identified English as their native language had reading test scores at or above 225 compared to participants who identified Spanish (57.0%), Tagalog (55.7%), Korean (55.0%), Japanese (53.3%), and Other native languages. (See Figure 3.5.) Also of note, test score performance at the 225 and above level differed for Vietnamese speakers, 41.7 percent of whom scored at this level compared to only approximately 19 percent of the native Laotian (18.5%) and Cambodian (19.2%) speakers.

Participants who identified Laotian or Cambodian as their native language also had a higher percentage of participants who scored below 215. As presented in Figure 3.5, 57.2 and 59.6 respectively of Laotian and Cambodian speakers had scores below 215. The number of GAIN participants in these language categories is small and caution in analysis is encouraged. While not illustrated, it is of note that compared to only slightly more than one percent of the native English speakers who scored below 200 on the Reading Appraisal, the range for other languages was from five to 14 percent.

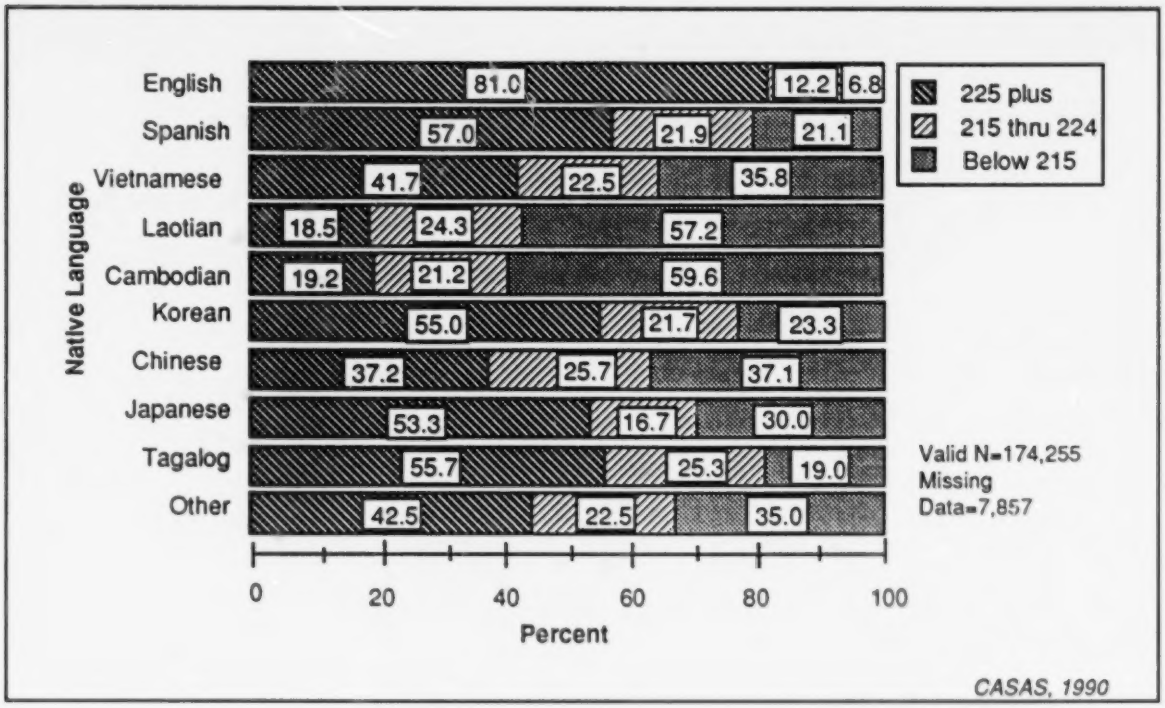

Figure 3.5 — Reading Appraisal Scores by Native Language

Reading Appraisal Scores by Highest Grade Completed

Overall, there is a positive relationship between reading test scores and category of highest grade completed. As presented in Figure 3.6, more than 93 percent of the participants who completed 13 and more years of school had a Reading Appraisal score at the 225 and above level compared to 85.2 percent of participants at the 12th grade level and approximately 73 percent at the 9th through 11th grade level. Only 53.4 percent of the participants who completed grades 7-8 and 30.3 percent of participants who completed zero through 6th grade scored at the 225 and above level on the GAIN Reading Appraisal.

Nearly one-half (48.3%) of the GAIN participants in this study population who completed six or fewer years of school had a reading scale score below 215 compared to only 23.1 percent of the participants who completed 7-8 years, 9.8 percent at 9 through 11 years, 4.7 percent of those who completed 12 years and 1.8 percent of participants who completed 13 or more years of school. More than 16 percent of the participants who completed 0-6 years of school had Reading Appraisal scores below 200 compared to less than two percent in the other grade level categories.The mean reading scale score for participants who completed Grade Levels 0-6 was 216.0; Grade Levels 7-8, 224.4; Grade Levels 9-11, 231.4; Grade 12, 236.9; and for Grade Levels 13 and above, 242.6.

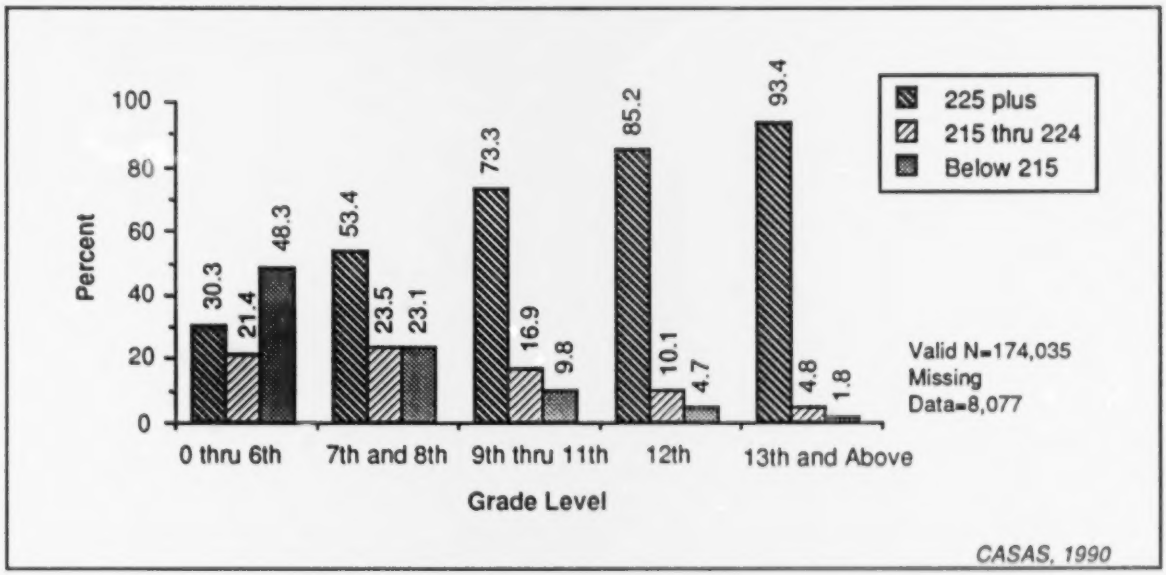

Figure 3.6 — Reading Appraisal Scores by Highest Grade Completed

Reading Appraisal Scores by Degree Earned

As with the number of years of school completed, there was a positive relationship between having a diploma or degree and reading test score performance. This positive relationship between reading test score performance and degree is presented in Figure 3.7 which shows the percentage in each category achieving each scale score level. Approximately 84 to 93 percent of participants in all diploma/degree categories scored at the 225 and above level compared with only 63.4 percent of participants who reported that they did not earn a degree or diploma of any kind. Greater than 16 percent of those without a diploma or degree also scored below 215 on the GAIN Reading Appraisal compared to approximately two to nine percent of those who have a degree.

Finally, 3.4 percent of participants without a degree scored below 200 compared to less than one percent of the participants in all other categories.

Mean scale scores for participants who earned a diploma or degree of any kind were higher than for those who reported that they had no degree. The mean reading test score for those reporting no diploma or degree was 227.6, ten to 16 points lower than the mean reading test scores of those who had earned a diploma or degree of any kind. The mean test scores for each category were CHSPE 239.4; GED Certificate 239.3; High School Diploma 237.5; Technical Degree 237.0; AA Degree 242.8; and Four Year Degree 243.1.

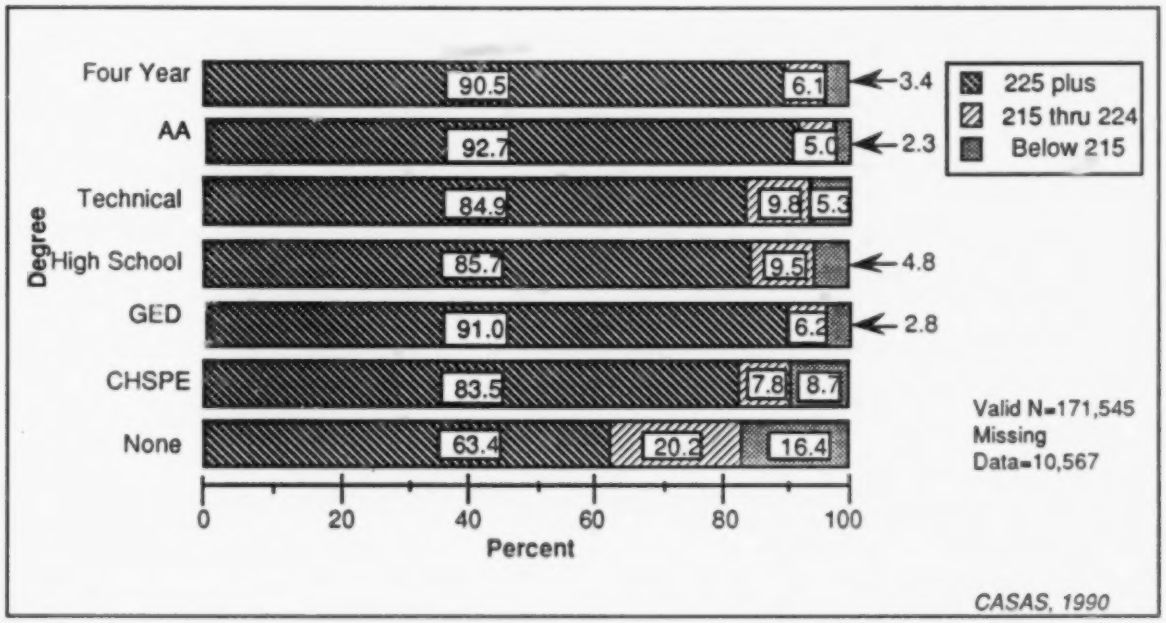

Figure 3.7 — Reading Appraisal Scores by Diploma/Degree

Reading Appraisal Scores by Location of Last School Attended

Reading test score performance by whether participants last attended school (high school or below) in California or not, is available for 58,096 GAIN participants, approximately 69 percent of whom last attended school in California. California participants had a greater percentage scoring above 225 on the GAIN Reading Appraisal than those whose last school attended (high school or below) was out of state. (See Figure 3.8.)

The mean reading scale score for participants whose last school attended was in California was slightly higher (233.8) than the mean reading scale score of 232.0 for those who last attended school outside of California.

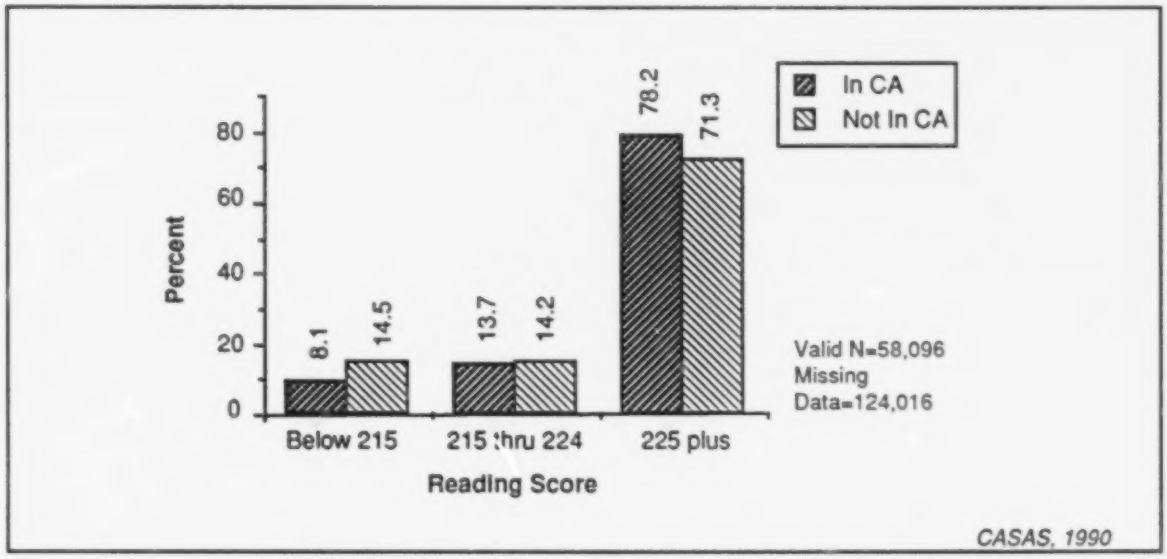

Figure 3.8 — Reading Appraisal Scores by Location of Last School Attended

Reading Appraisal Scores by Program Characteristics

Aid Category

Reading test score performance by Aid Category is presented in Figure 3.9. Test scores by Aid Category data are available for 118,026 GAIN participants in this study population. The mean reading scores were AFDC-FG 234.7; AFDC-U 231.5; RCA 226.3; and GR 227.0. Similarities in test score performance are seen between the two AFDC categories. The AFDC-FG category had the greatest percentage of participants scoring above 225 (79.8%) and also had the smallest percentage (7.6%) scoring below 215 on the GAIN Reading Appraisal compared with the AFDC-U category which had 77.1 percent scoring 225 and above and 9.1 percent scoring below 215. While the RCA and GR categories each had greater than 21 percent scoring below 215 on the GAIN Reading Appraisal, the numbers of persons in these categories is small and caution in analysis is again encouraged.

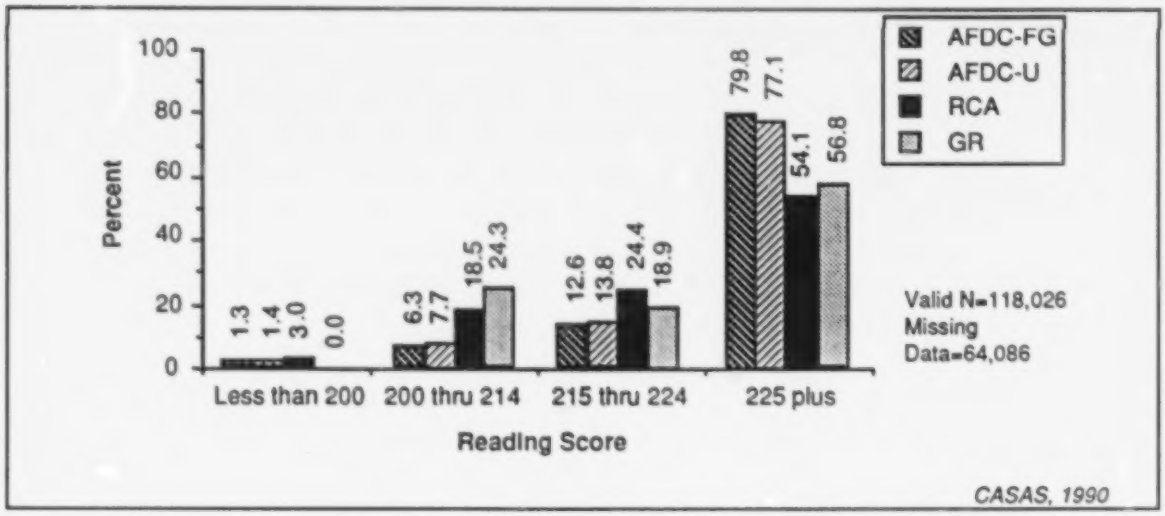

Figure 3.9 - Reading Appraisal Scores by Aid Category

Aid Status

Analysis of data regarding test score performance and Aid Status revealed no notable differences based on whether participants were identified as New, Existing or Restoration cases. These data are presented in Figure 3.10. Mean scale scores on the GAIN Basic Reading Test for the Aid Status categories were New 234.1; Existing 232.9; and Restoration 233.4.

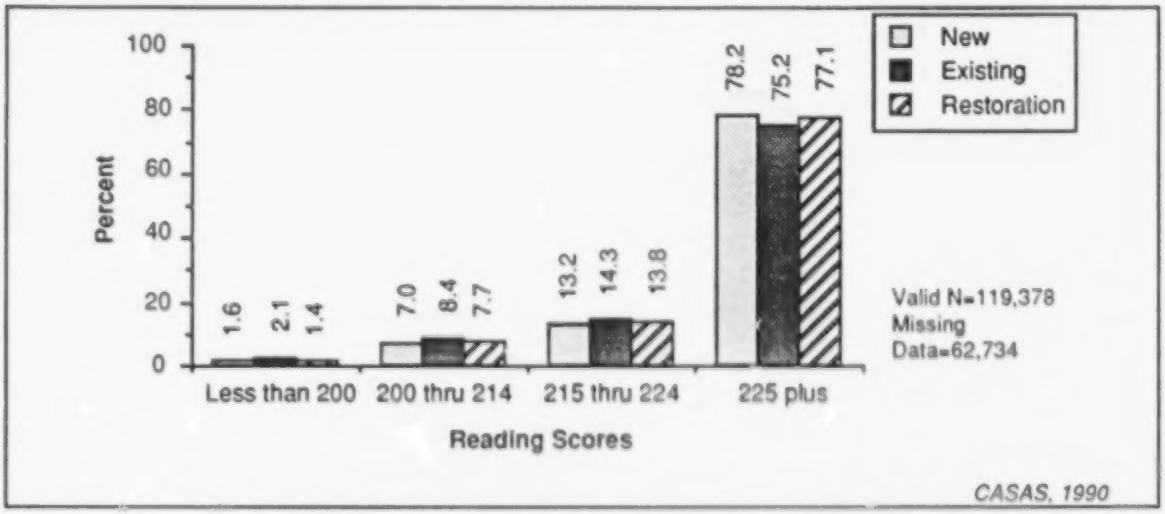

Figure 3.10 — Reading Appraisal Scores by Aid Status

Registration Status

Based on data for 124,027 GAIN clients, fewer Mandatory (75.3%) participants had reading test scores above 225 compared to Voluntary (86.0%) participants. As presented in Figure 3.11, Mandatory participants also had a greater percentage scoring below 215. Mean scale scores on the GAIN Basic Reading Test were Mandatory, 233.0 and Voluntary, 237.1.

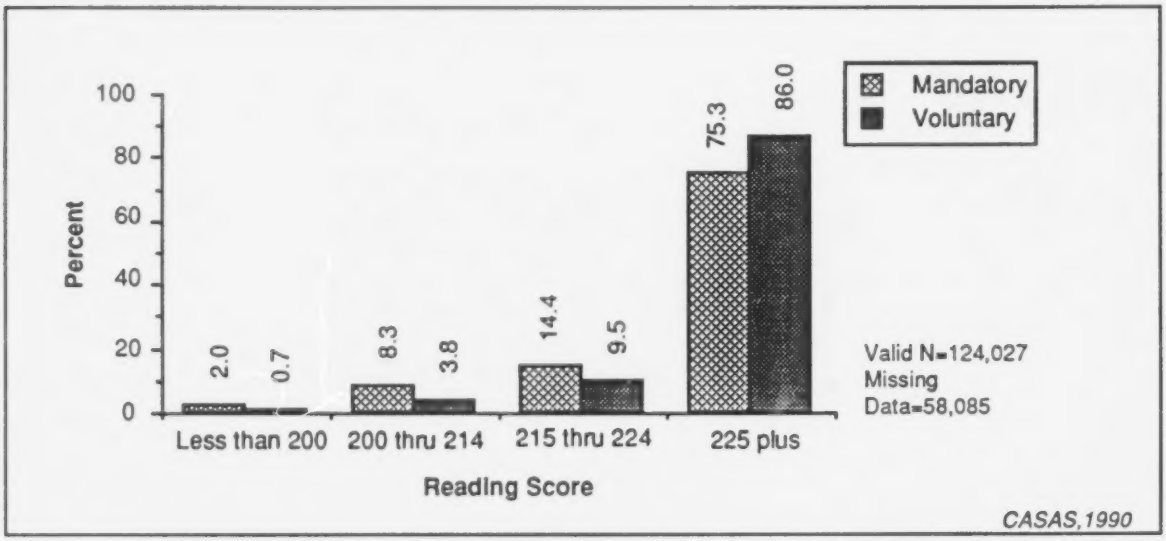

Figure 3.11 — Reading Appraisal Scores by Registration Status

GAIN MATH APPRAISAL SCORES

Like reading test score performance, math test performance through April 1990 was similar to that reported in GAIN III. Approximately 36 percent of this study population achieved a scale score of 225 and above and 26.4 percent scored at the 215 through 224 scale score level. Of the remaining 37.5 percent, approximately 30 percent scored between a 200 and 214 scale score and nearly eight percent scored below 200. (See Figure 3.12.) The mean or average scale score on the GAIN Math Appraisal was 218.9, slightly higher than the GAIN III mean scale score of 217.0.

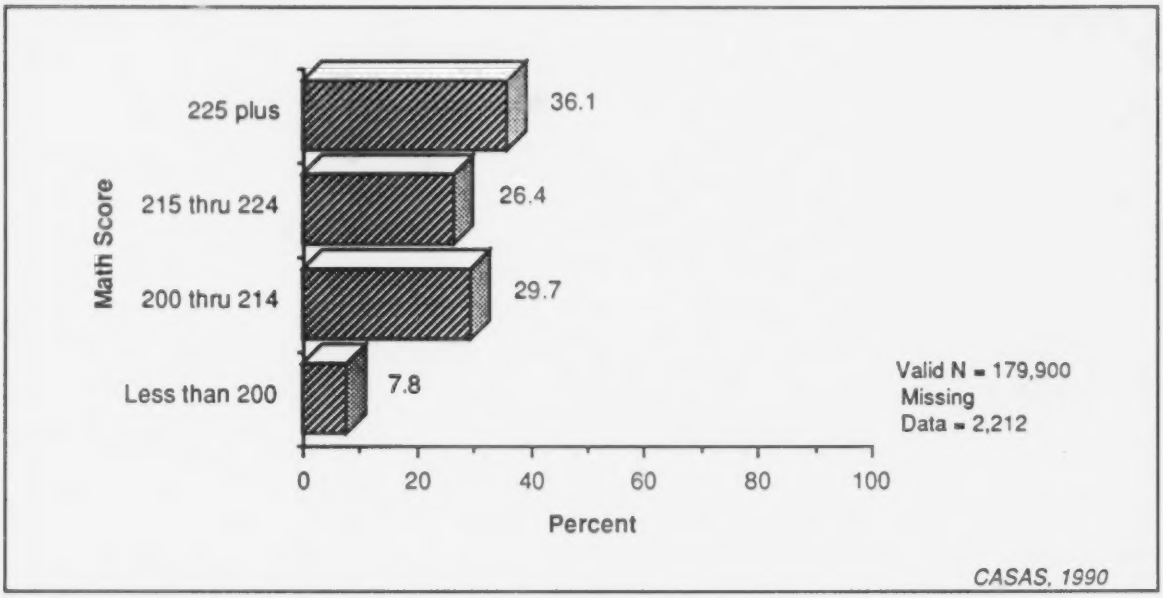

Figure 3.12 — Math Appraisal Scores

Math Appraisal Scores by Gender

Math test score performance by gender data are available for 164,572 GAIN participants in this study population. As presented in Figure 3.13, the percentage of males and females scoring at each scale score level is nearly identical. Approximately 37 percent of both males and females achieved a scale score of 225 and above and 36.5 percent in each category scored at the below 215 level. The mean math scale score was 219.3 for Males and 219.1 for Females.

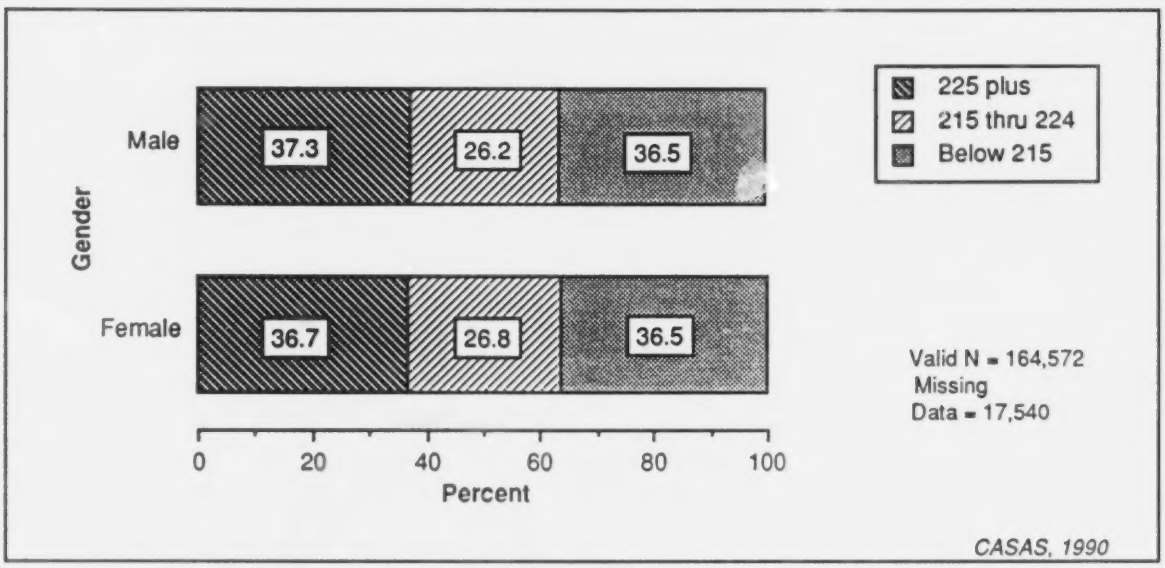

Figure 3.13 — Math Appraisal Scores by Gender

Math Appraisal Scores by Age

Notable differences in Math Appraisal score performance are identified by age category. (See Figure 3.14.) Approximately 36 to 39 percent of participants through age 44 achieved a math scale score at the 225 and above level compared to only 28.2 percent of participants age 45 and over. Thirty-seven percent of participants in both the 25-34 and 35-44 age categories scored below 215 on the GAIN Basic Math Test. A smaller percentage (34.6%) of participants under age 25 scored below 215.

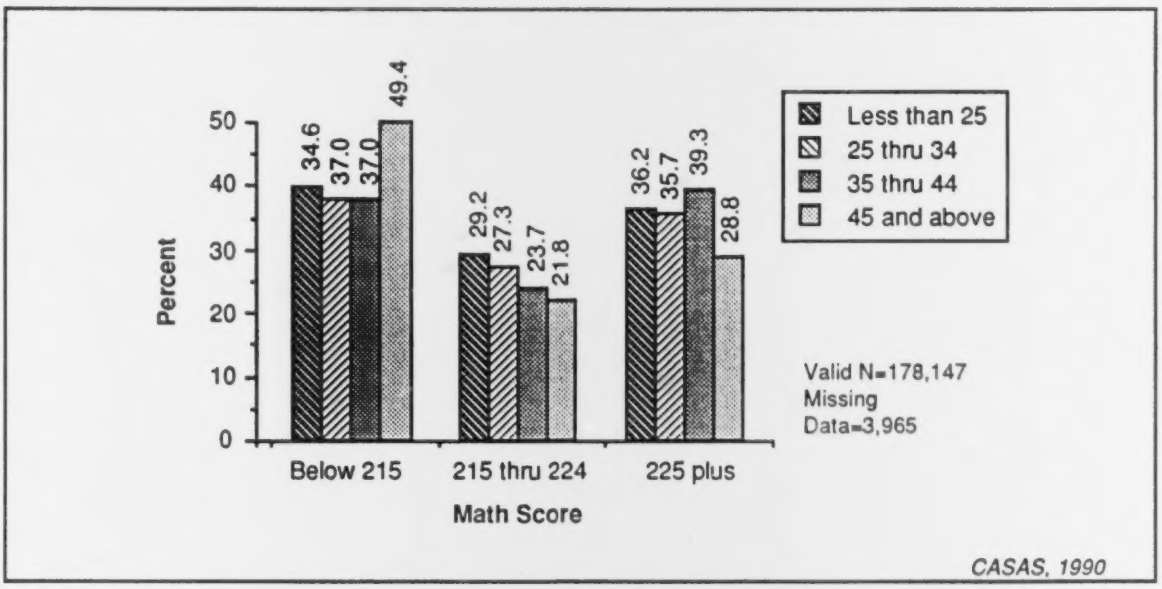

Figure 3.14 — Math Appraisal Scores by Age

Math Appraisal Scores by Ethnic Background

Compared to the overall mean math scale score (218.9) for this study population, mean scale scores on the math test ranged from 212.9 for both Asians and Indo-Chinese to 225.0 for Caucasians. Mean scale scores on the math test were lower than the mean, in fact, not only for Asians and Indo-Chinese, but also for Blacks, (213.3), Hispanics (214.0), Native Americans (215.1), Filipinos (216.3), and Pacific Islanders (216.8).

As presented in Figure 3.15, Caucasians had the greatest percentage (52.3%) of participants scoring at or above a 225 scale score on the GAIN Math Appraisal, more than twice the percentage scoring at that level in most of the other ethnic categories. Approximately 21 to 28 percent of participants in each category scored at the 215 through 224 scale score level. One-half or more of the participants in four categories, namely Hispanic, Black, Asian and Indo-Chinese scored below 215 on the Math Appraisal. The percentage in each ethnic category with scale scores below 200 ranged from three percent for Caucasians to nearly 18 percent for Indo-Chinese.

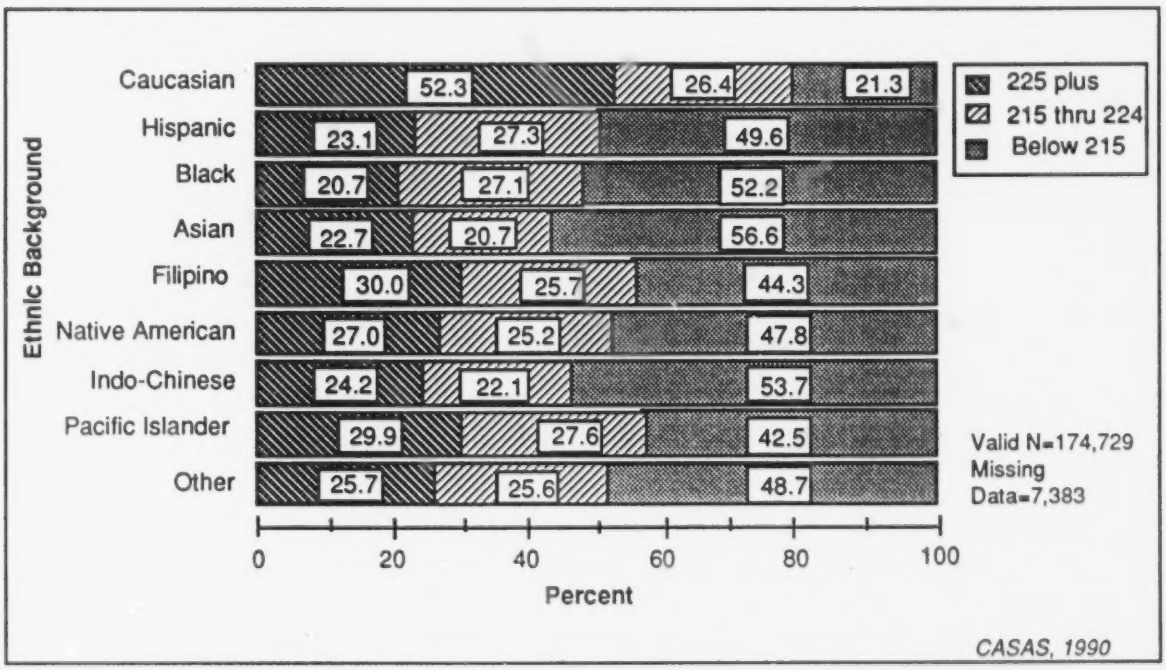

Figure 3.15 — Math Appraisal Scores by Ethnic Background

Math Appraisal Scores by Native Language

Math test score data by Native Language are available for 173,987 GAIN clients in this study population. The relationship between English reported as participants' native language and math test score performance is not as strong as that reported between reading test score performance and native language. (See Figure 3.16.) More than one-half of the native Korean speakers, approximately 39 percent of both native English and Japanese speakers, 34 percent of Vietnamese and 27 percent of Chinese speakers scored at the 225 and above level. Approximately 18 percent of both native Spanish and Tagalog speakers and only 11 percent and nine percent respectively of native Laotian and Cambodian speakers scored at the 225 and above level. Native Laotian and Cambodian speakers also had the greatest percentage of participants who scored below 215 on the GAIN Math Appraisal.

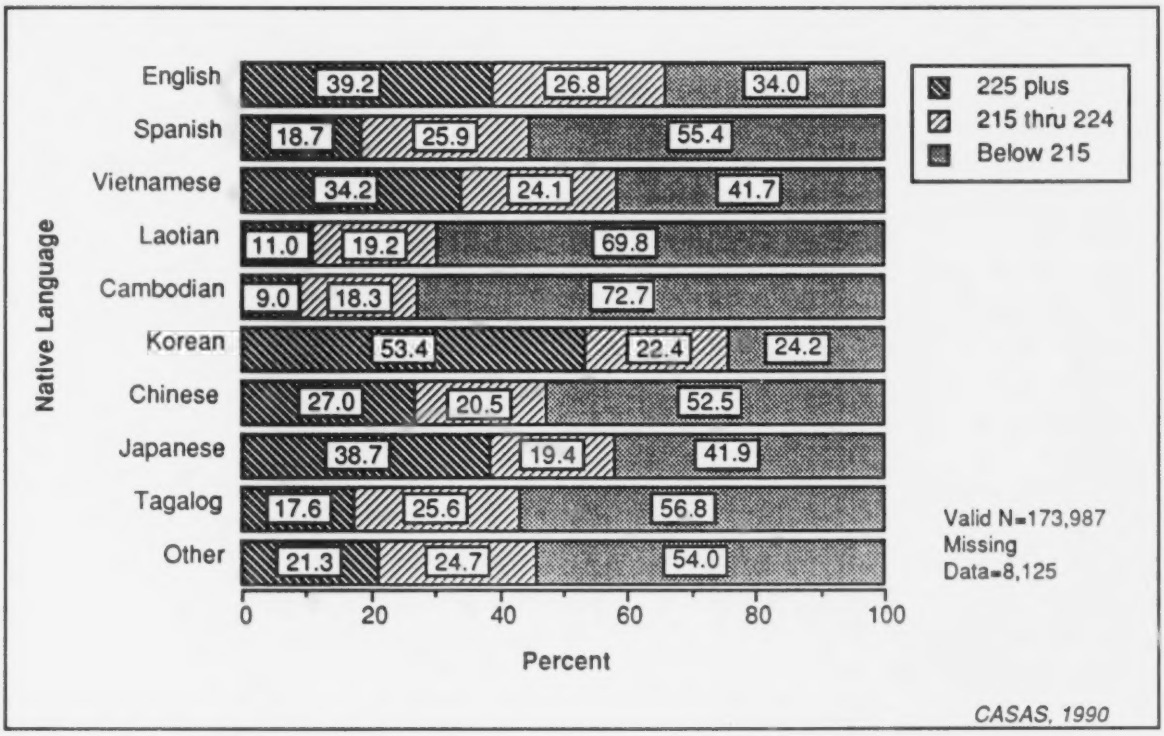

Figure 3.16 — Math Appraisal Scores by Native Language

Math Appraisal Scores by Highest Grade Completed

Math test score performance by Highest Grade Completed is based on data from 173,781 GAIN clients in this study population. As with Reading Appraisal Scores, there was a positive relationship between the number of years of school completed and level of performance on the GAIN Math Appraisal. (See Figure 3.17.)

At the upper end of the scale score range, less than 11 percent of participants who completed six or fewer years of school and 14 percent of participants who completed 7 and 8 years of school scored at the 225 and above level on the GAIN Math Appraisal compared with nearly 28 percent of participants who completed 9 through 11 years of school. Test score performance for participants who completed grades 12 and 13 or above had 45 and 66 percent respectively scoring at the 225 and above level.

This positive relationship also existed at the lower end of the scale score range where nearly three-fourths (74%) of the participants who completed six or fewer years of school scored below 215 compared to approximately 63, 43, 28, and 13 percent respectively for participants who completed 7-8, 9-11, 12 and 13 or more years of school.

The mean scale score for participants who completed six or fewer years of school was 205.4 compared to mean scores of 209.6, 216.2, 222.2 and 229.8 for participants who respectively completed grades 7-8, 9-11, 12 and 13 or more years of school.

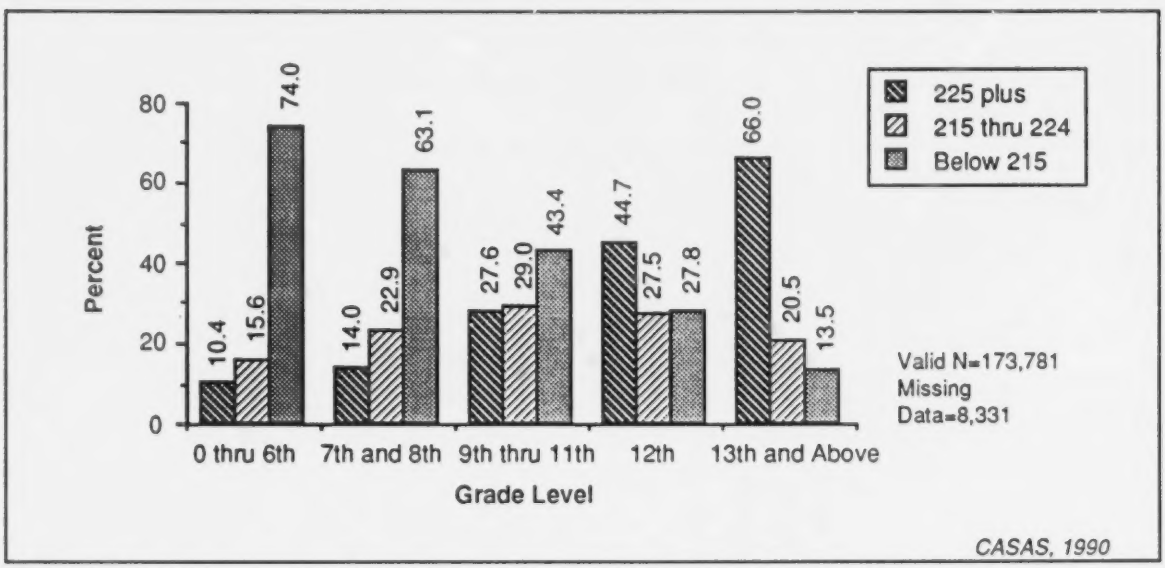

Figure 3.17 — Math Appraisal Scores by Highest Grade Completed

Math Appraisal Scores by Diploma/Degree

As reported for Reading Appraisal Scores, there was a positive relationship between having a diploma or degree of some kind and Math Appraisal score performance. The mean scale scores on the GAIN Basic Math Test in the various categories were CHSPE 227.9; GED 225.1; High School Diploma 223.1; Technical Degree 221.7; AA Degree 230.8; and 232.8 for those with a Four Year Degree. The mean scale score of 212.7 for participants who reported no degree of any kind is lower by comparison.

The percentage of participants with some type of diploma or degree who scored at the 225 and above level on the Math Appraisal ranged from 43 percent to 72 percent to just under 20 percent for those who had no degree. (See Figure 3.18.) Nearly three-fourths (73.5%) of all participants who scored below 200 on the GAIN Math Appraisal reported having no diploma or degree of any kind.

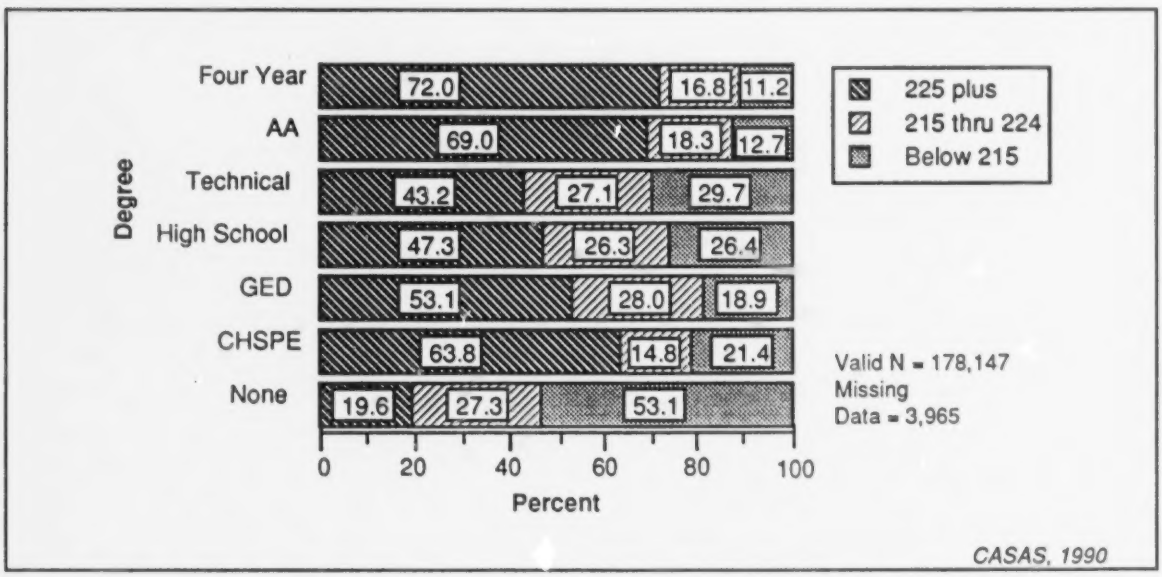

Figure 3.18 — Math Appraisal Scores by Diploma/Degree

Math Appraisal Scores by Location of Last School Attended

Data are available for 57,951 GAIN clients in this study population. The mean scale score on the GAIN Math Appraisal was 218.5 for those who last attended school in California and 218.1 for those who last attended school out of state. As presented in Figure 3.19, 38 percent of participants who last attended school in California scored below 215 compared to approximately 40 percent of GAIN clients who reported that they last attended school outside of California.

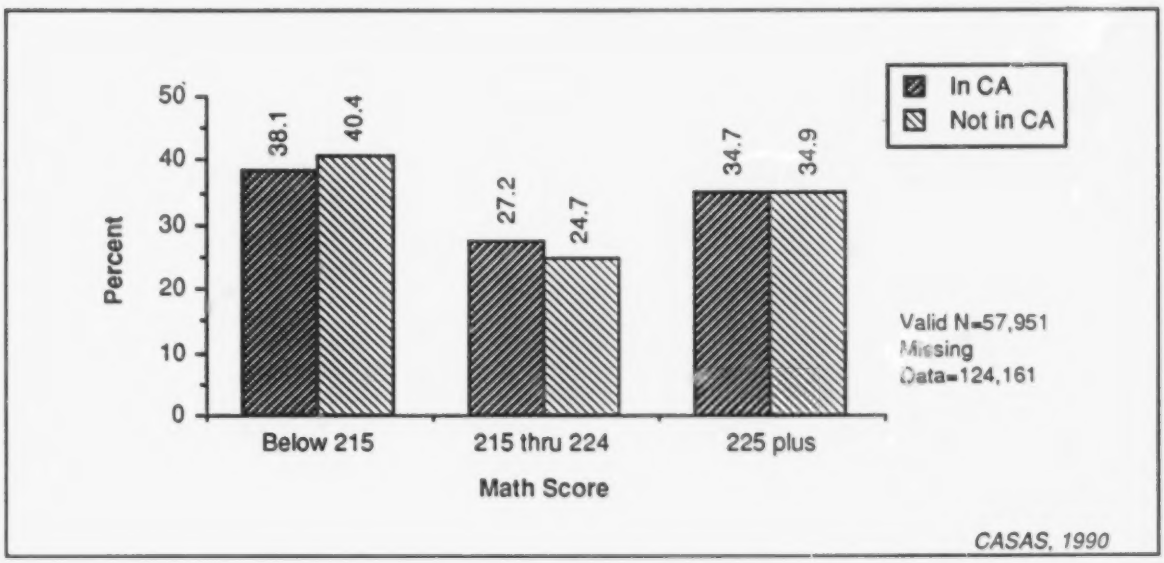

Figure 3.19 — Math Appraisal Scores by Location of Last School Attended

Math Appraisal Scores by Program Characteristics

Aid Category

Math test score performance by the various program characteristics is presented in Figure 3.20. Test scores by Aid Category data are available for 117,814 GAIN clients in this study population. Like reading test score performance, math test score performance was similar for the two AFDC categories. Mean test score performance was nearly identical for AFDC-FG (219.4) and AFDC-U (219.3) participants as was the percentage of each AFDC category (37%) scoring above 225 on the GAIN Math Appraisal. Mean math scale scores were 213.3 for RCA participants and 212.4 for GR participants. While greater than half of each of the two latter categories scored below 215 on the GAIN Math Appraisal, the actual numbers of participants is small and caution in analysis is advised.

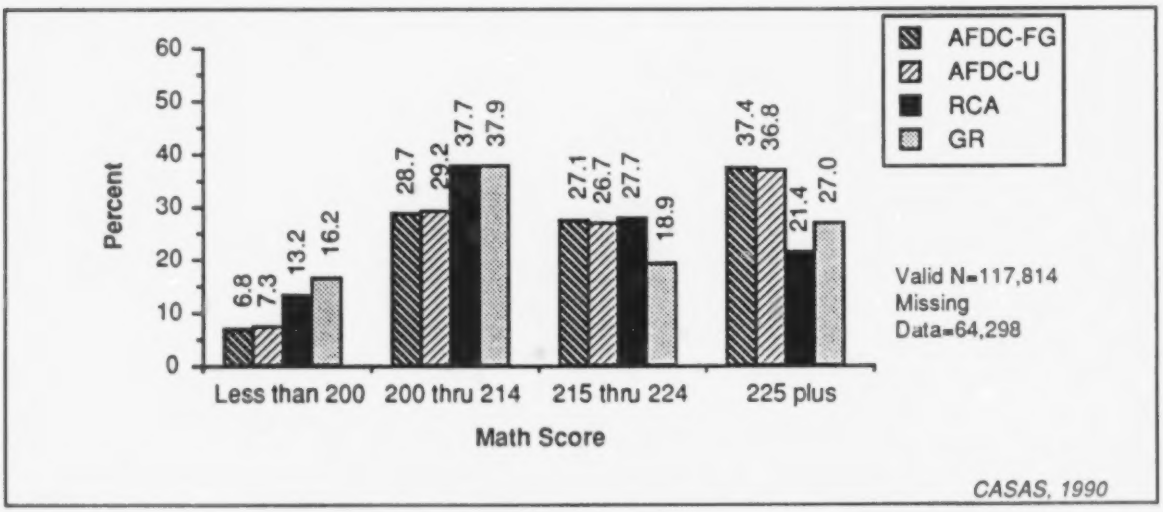

Figure 3.20 — Math Appraisal Scores by Aid Category

Aid Status

While some differences in test score performance by Aid Status were identified, the differences were not pronounced. As presented in Figure 3.21, approximately 35 to 38 percent of participants in each Aid Status category scored 225 and above on the GAIN Math Appraisal and 65 percent of the New cases, 63 percent of the Existing cases and 65 percent of the Restoration cases scored at or above 215. Only slight differences existed in mean scale scores as well. The mean math scale score for New cases was 219.8, Existing cases 218.4 and Restoration cases 219.2.

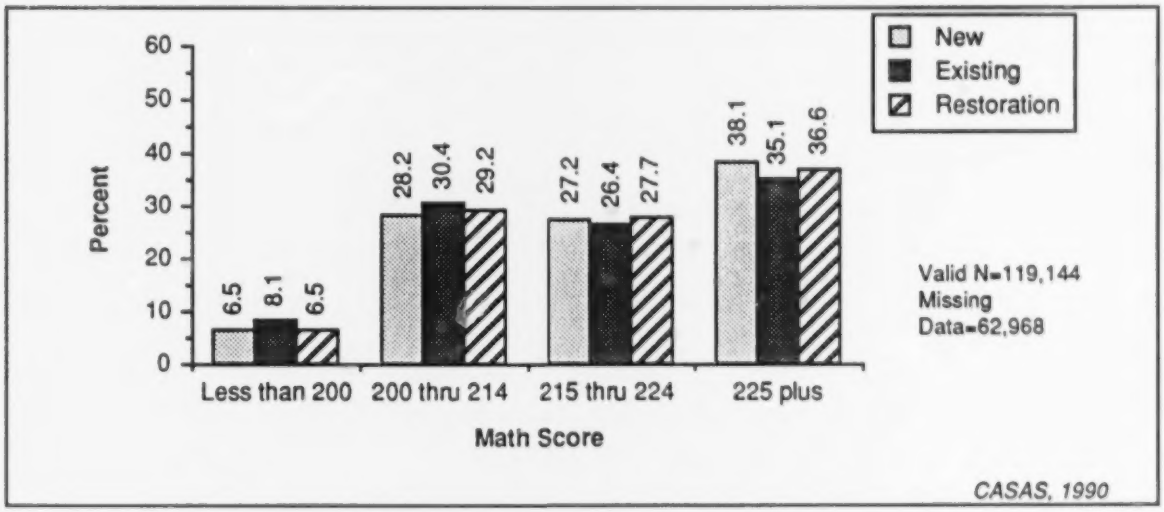

Figure 3.21 — Math Appraisal Scores by Aid Status

Registration Status

Mean scale scores by Registration Status were 218.7 for Mandatory clients in this study population and 221.3 for Voluntary participants. Approximately 36 percent of Mandatory participants scored at or above 225 compared to 42 percent of Voluntary participants. Nearly eight percent (7.8%) of participants with Mandatory status scored below 200 on the GAIN Math Appraisal compared with less than five percent (4.6%) of GAIN participants whose Registration status was Voluntary. (See Figure 3.22.)

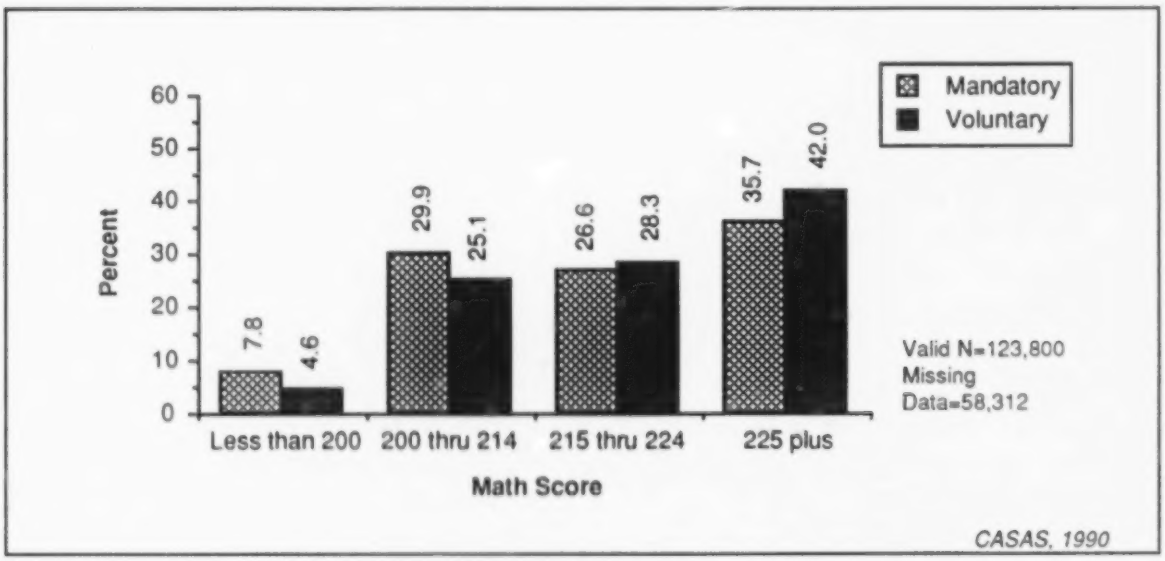

Figure 3.22 — Math Appraisal Scores by Registration Status

SUMMARY

Test score performance on both the GAIN Reading and Math Appraisals provides essential information for the referral process. Test score performance presented thus far provides insight into the percentage of participants in each given category performing at each of the four scale score levels. However, the combined GAIN participants' reading and math scores is used in the referral process, and it is this composite test score performance which is presented and summarized in Chapter Four.

Recommended educational referrals and estimated duration based on a model which incorporates various composite test score performance combinations and educational history are also summarized in the following chapter. Chapter Four additionally presents projected educational referral information for this study population based on actual composite test score performance in conjunction with GAIN participants' program characteristics.

Chapter Four:
Composite Test Scores and Educational Referrals

The inherent need for assessment in the 1985 GAIN Legislation provided the impetus for the development and implementation of the GAIN Appraisal Program. Chapter One describes the GAIN Appraisal Program including the assessment instruments which comprise it. This background information is followed in Chapter Two by a demographic and educational profile of this four-year GAIN study population. Chapter Two further provides information regarding participating GAIN clients' aid category, aid status and registration status. Test score performance on each of the GAIN Reading and GAIN Math Appraisal is presented in Chapter Three.

This chapter presents the combined test score performance on both the GAIN Reading and Math Appraisals. Combined or composite data indicate the percentage of individuals scoring at each of the four scale score levels on both tests, enhancing predictability and having greater utility in the educational referral process.These composite data are summarized in Table 4.1 for the overall study population and in Tables 4.2 through 4.4 relative to the demographic, educational and program characteristics of the GAIN clients in this study population.

Since composite test score performance provides the primary basis for educational referrals, this chapter concludes with educational referral projections, beginning with recommended referrals and proceeding to projected referrals. Recommended educational referrals are presented in Table 4.5. and projected educational referrals are presented in Figures 4.1 through 4.4 for both the overall study population and relative to participants' program characteristics.

COMPOSITE TEST PERFORMANCE: READING SCORES BY MATH SCORES

Data regarding test score performance on both the GAIN Reading and Math Appraisals are available for 179,218 participants in this study population. The percentage of GAIN participants in this study population with test scores at each scale score level are summarized in Table 4.1. Approximately 44 percent of the participants in this study population scored at the same level in both reading and math, the majority (35.5%) of whom scored at the 225 and above level on both Appraisals. Three percent scored at the 215 through 224 level on both tests; 4.5 percent scored at the 200 through 214 level on both tests; and one percent scored below 200 on both Appraisals.

Table 4.1
Summary Test Score Performance

How to Read Each Cell:
Number (N)
Row %
Column %
Total %

Reading Score	Math Score: Less than 200	Math Score: 200 - 214	Math Score: 215 -224	Math Score: 225 Plus	Row N / Row %
Less than 200	1,765 56.6% 12.9% **1.0%**	1,235 39.6% 2.3% **0.7%**	108 3.5% 0.2% **0.1%**	10 0.3% 0.0% **0.0%**	3,118 1.8%
200 - 214	4,678 32.8% 34.2% **2.6%**	8,066 56.6% 15.2% **4.5%**	1,276 9.0% 2.7% **0.7%**	228 1.6% 0.4% **0.1%**	14,248 7.9%
215 - 224	4,107 16.5% 30.0% **2.3%**	14,279 57.4% 26.8% **8.0%**	5,313 21.4% 11.2% **2.9%**	1,168 4.7% 1.8% **0.7%**	24,867 13.9%
225 Plus	3,128 2.3% 22.9% **1.7%**	29,624 21.6% 55.7% **16.5%**	40,692 29.7% 85.9% **22.7%**	63,541 46.4% 97.8% **35.5%**	136,985 76.4%
Column N Column %	13,678 **7.6%**	53,204 **29.7%**	47,389 **26.4%**	64,947 **36.3%**	179,218 **100.0%**

Missing Data=2,894

CASAS, 1990

Approximately 54 percent of the GAIN participants in this study population scored lower in math than reading and only 2.3 percent scored higher. It is interesting to note that of the one percent of participants who scored below 200 on both tests, approximately 43 percent scored higher in math than in reading.

Reading and Math Test Score Performance by Demographic Characteristics

Table 4.2 presents composite test score performance by select demographic characteristics. For each demographic variable, the percentage of participants in a particular category who scored at the same level on both basic tests is presented. The percentages of participants who scored at different levels on the two basic tests, in other words, who scored at a higher scale score level in reading than math or vice versa are also presented.

Gender. Data regarding Reading and Math Appraisal score performance by gender are available for 163,977 participants in this four-year GAIN study population, approximately 64 percent of whom are female, 36 percent male. Slightly greater than 36 percent of both males and females scored at or above 225 on both tests. Nearly eight (7.7%) percent of the males scored below 215 on both the GAIN Basic Reading and Math tests compared with only 3.9 percent of the females.

Age. Reading and math test score performance by age category are available for 177,561 GAIN participants in this study population. The percentage of participants who scored at the 225 and above level ranged from 35 to 38.5 percent with the exception of participants age 45 and above, 27.6 percent of whom scored at the 225 and above level on both the Reading and Math Appraisal. Another notable exception was the 4.5 percent of participants in the age 45 and over category who scored higher in math than reading and 12 percent of whom scored below 215 on both the GAIN Reading and Math Tests. The majority (50 to 56 percent) in each age category scored lower in math than in reading and the percentage in each age category scoring 215 and above on both tests ranged from approximately 32 to 42 percent.

Ethnic Background. Data regarding reading and math test score performance by ethnic category are available for 174,160 GAIN participants in this study population. Congruent with reported test score findings in Chapter Three, Caucasians in this study population had a far greater percentage (51.7%) scoring 225 and above on both the reading and math tests as well as the smallest percentage (1.7%) scoring below 215 on both tests.

Approximately 19 percent of both Asians (19.7%) and Indo-Chinese (19.4%) in this GAIN study population scored at the 225 and above level on both tests.These two ethnic categories had the greatest percentages scoring below 215 on both tests (Asians 24.9% and Indo-Chinese 27.5%) and also the greatest percentage scoring higher in math than in reading, 11 and 15.2 percent respectively.

Table 4.2

Composite Test Score Performance* GAIN Basic Reading and Math Tests by Demographic Characteristics

Score Level	225+	215 thru 224	200 thru 214	<200	Read>Math	Math>Read
Gender						
Male N=56,624	36.1	4.3	6.3	1.4	48.2	3.7
Female N=107,353	36.3	2.3	3.3	0.6	56.0	1.5
Age						
Less than 25 N=34,734	35.3	3.5	3.9	0.4	54.9	2.0
25 thru 34 N=88,217	35.2	2.6	3.9	0.7	55.8	1.8
35 thru 44 N=44,795	38.5	3.0	5.1	1.2	49.6	2.6
45 and above N=9,815	27.6	4.1	8.5	3.5	51.8	4.5
Ethnicity						
Caucasian N=81,304	51.7	1.9	1.5	0.2	43.4	1.3
Hispanic N=43,747	22.5	3.8	5.7	1.1	64.8	2.1
Black N=30,158	20.3	2.6	5.3	0.9	69.2	1.7
Asian N=3,810	19.7	8.0	19.9	5.0	36.4	11.0
Filipino N=1,235	29.5	3.6	6.4	1.4	56.7	2.4
Native American N=6,554	26.3	3.7	7.2	1.4	58.6	2.8
Indo-Chinese N=3,048	19.4	9.1	18.9	8.6	28.8	15.2
Pacific Islander N=1,097	28.0	5.7	6.3	1.6	53.9	4.5
Native Language						
English N=151,640	38.7	2.4	3.2	0.5	53.7	1.5
Spanish N=13,008	17.8	4.9	8.7	2.4	62.6	3.6

*Percentage of participants who scored at each level

CASAS, 1990

Native Language. Data regarding reading and math scores by native language are available for 179,218 participants in this GAIN study population. Similar to the findings reported earlier, there appears to be a relationship between native language and test score performance. Data are presented in Table 4.2 for only the two major language categories, English and Spanish as an overwhelming majority (83.7%) of participants reported English as their native language and 8.4 percent reported Spanish. More than seven languages comprise the remaining 7.9 percent including Vietnamese, Laotian, Cambodian, Korean, Japanese, Chinese, Tagalog and others. These are not illustrated because the numbers in each category are often small and test score performance patterns frequently too dissimilar to combine.

Nearly 39 percent of native English speakers scored at the 225 and above level compared to only 17.8 percent of the participants who reported Spanish as their native language. Approximately 41 percent of the participants who identified English as their native language scored above 215 on both tests compared to approximately 22 percent of the participants in the Spanish language category. Less than four percent (3.7%) of the native English speakers scored below 215 on both the GAIN Reading and Math Appraisals compared to 11.1 of the participants in the Spanish language category. More than one-half of the participants in both the English and Spanish native language categories had lower math scores than reading scores.

Table 4.3

**Composite Test Score Performance*
GAIN Basic Reading and Math Tests by
Educational Characteristics**

Score Level	225+	215 thru 224	200 thru 214	<200	Read>Math	Math>Read
Grade Level						
0-6 years N=6,831	9.3	3.8	18.0	9.4	51.8	7.7
7 to 8 years N=10,561	2.4	9.7	4.2	13.3	66.7	3.7
9 to 11 years N=74,835	26.9	3.5	4.8	0.7	61.9	2.2
12 years N=59,812	44.0	2.4	2.3	0.3	49.4	1.6
13 and above N=21,184	65.3	1.5	0.9	0.1	31.1	1.1
Diploma/Degree						
None N=75,653	18.8	3.9	7.3	1.7	65.2	3.1
High School N=61,789	46.6	2.2	2.4	0.4	46.9	1.5
GED N=17,778	52.4	1.9	1.3	0.1	43.0	1.3
Technical N=6,872	42.5	2.5	2.7	0.2	50.5	1.6
Associate of Arts N=4,394	68.3	1.6	1.0	0.2	27.6	1.3
Four Year N=2,641	71.1	2.3	1.6	0.1	22.8	2.1
Last School						
In California N=40,801	34.1	2.7	3.8	0.7	57.1	1.6
Out of State N=17,025	34.0	3.0	6.1	1.8	52.0	3.1

*Percentage of participants who scored at each level

CASAS ,1990

Reading and Math Test Score Performance by Educational Characteristics

Table 4.3 presents composite test score performance by select educational characteristics. For each educational variable, the percentage of participants in a particular category who scored at the same level on both basic tests is presented. The percentages of participants who scored at different levels on the two basic tests, in other words, who scored at a higher scale score level in reading than in math or vice versa are also presented.

Highest Grade Completed. Data regarding Highest Grade Completed are available for 173,223 GAIN participants in this study population, more than one-half of whom completed less than 12 years of school. A clear relationship has been established between grade level completed and test score performance on both the GAIN Reading and Math Appraisals.

Nearly two-thirds (65.3%) of the participants who completed 13 or more years of school scored 225 and above on both tests compared to 44.0 percent of participants who completed 12th grade and 26.9 percent of those who completed grades 9 through 11. Only 2.4 percent of participants who completed Grades 7-8 and 9.3 percent of participants who completed 0-6 years of school scored at the 225 and above level on both the GAIN Reading and Math Appraisals.

Participants who completed 0-6 years of school also had the highest percentage (27.4%) scoring below 215 on both tests. This finding is in sharp contrast to the test score performance below 215 on both tests for participants completing 7-8, 9-11 and 12 years of school (17.5, 5.5 and 2.6 percent respectively). Only one percent of participants who completed 13 or more years of school scored at this level.

Diploma/Degree Awarded. Data regarding test score performance in conjunction with whether or not GAIN participants in this study population earned a diploma or degree of any kind are available for 170,706 GAIN clients, approximately eight percent of whom earned either a Technical, Associate of Arts (AA) or Four Year Degree. The remaining 92 percent was fairly equally divided between those who had no diploma or degree of any kind and those who reported having earned a high school diploma or equivalent. The number of participants who reported earning a CHSPE (N=1,579) is too small to illustrate. The GED category (N=17,778) is, however, presented in Table 4.3.

A positive relationship existed between having a diploma/degree of any kind and test score performance on both the GAIN Reading and Math Tests. Only 18.8 percent of the participants who have no degree scored at or above 225 on both tests compared to 43 to 71 percent of those who have a diploma/degree of some kind.

Nine percent of the participants without a diploma/degree scored below 215 on both the GAIN Basic Reading and Math Tests compared to only 1.2 to 2.9 percent of participants in the remaining categories.

Location of Last School Attended. Data regarding Reading and Math test score performance by whether participants' last school attended (high school or below) was in California or not are available for 57,826 participants, approximately 70 percent of whom

last attended school (high school or below) in California. The relationship between test score performance and this variable is weaker than that reported for the other educational variables.

Approximately 34 percent of each group scored at 225 or above on both tests and three percent scored at the 215 through 224 level, initially suggesting that where participants attended school last had little if any bearing on test score performance. This was not the case, however, upon review of test score performance below 215. Nearly eight percent of out of state participants scored below 215 on both the GAIN Reading and Math Appraisals compared to 4.5 percent of those who last attended school in California.

Table 4.4

Composite Test Score Performance*
GAIN Basic Reading and Math Tests by Program Characteristics

Score Level	225+	215 thru 224	200 thru 214	<200	Read>Math	Math>Read
Aid Category						
AFDC-FG N=81,691	36.8	2.5	3.5	0.6	55.0	1.6
AFDC-U N=35,226	35.8	4.1	6.0	1.4	49.4	3.3
RCA/GR N=539	21.1	6.7	10.2	0.4	57.0	4.6
Aid Status						
New N=55,433	37.4	2.9	4.0	0.7	53.0	2.0
Existing N=55,695	34.4	3.0	4.6	1.0	54.7	2.3
Restoration N=7,661	35.9	3.3	4.6	0.7	53.7	1.8
Registration Status						
Mandatory N=104,024	34.9	3.1	4.7	1.0	54.0	2.3
Voluntary N=19,401	41.6	2.0	2.1	0.3	52.9	1.1

*Percentage of participants who scored at each level

CASAS ,1990

Reading and Math Test Score Performance by Program Characteristics

Table 4.4 presents composite test score performance by the various program characteristics. For each program variable, the percentage of participants in that particular category who scored at the same level on both basic tests is presented. The percentage of participants who scored differently on the two basic tests, in other words, who scored at a higher scale score level in reading than math or vice versa are also presented.

Aid Category. As pointed out earlier, counties began collecting Aid Category data in 1987. Of the four aid categories, AFDC-Family Group (AFDC-FG), AFDC-Unemployed (AFDC-U), Refugee Cash Assistance (RCA), and General Relief/General Assistance (GR), nearly 70 percent are AFDC-FG and 30 percent AFDC-U. The RCA and GR categories combined account for less than one-half of one percent of the GAIN participants in this study population. Data regarding test score performance on both the GAIN Reading and Math Appraisals in conjunction with Aid Category is available for 117,456 GAIN clients.

Little difference was seen between the percentage of participants in the two AFDC categories who scored 225 and above on both tests (AFDC-FG 36.8% and AFDC-U 35.8%). There was a pronounced difference between these two groups, however, in the percentage who scored below 215 on both tests, 4.1 and 7.4 percent respectively. Approximately twice the percentage of participants in the AFDC-U category scored higher in math than in reading compared to the AFDC-FG category (3.3% and 1.6% respectively) and the AFDC-FG category participants had a higher percentage with a reading test score higher than their math test score (AFDC-FG 55.0%, AFDC-U 49.4%).

The percentage of participants in the RCA/GR combined category who scored at or above 225 on both the GAIN Reading and Math Appraisals was 21.1 percent. More than ten percent (10.6%) of the participants in this combined aid category scored below 215 on both tests. This combined aid category also had the greatest number of participants (4.6%) with math scores higher than their reading scores.

Aid Status. Data analysis of composite test score performance in conjunction with Aid Status for 118,789 GAIN participants revealed similar patterns for the three categories (New, Existing, Restoration). Percentages of participants who scored at the 225 and above level ranged from 34 to 37 percent and roughly three percent scored at the 215 through 224 scale score level. Approximately five to six percent in all categories scored below 215 on both the GAIN Reading and Math Appraisals.

Registration Status. Registration status data, that is whether a participant's status is Mandatory or Voluntary, in conjunction with test score performance on both the GAIN Reading and GAIN Math Appraisals are available for 123,425 GAIN participants in this study population. Approximately 84 percent of the participants in this study population have a Mandatory registration status.

As presented in Table 4.4, 34.9 percent of Mandatory participants scored at or above 225 on both the GAIN Reading and Math Appraisals compared to 41.6 percent of the Voluntary participants. The Mandatory group had a greater percentage (5.7%) who scored below 215 on both tests and also below 200 (1.0%). Less than 2.5 percent of the Voluntary participants scored below 215 on both GAIN tests and less than one-half of one percent (0.3%) scored below 200 on both the GAIN Reading and Math Appraisals.

Table 4.5
Recommended Educational Referrals

GAIN Appraisal Program
Recommended Educational Referrals and Estimated Duration Based on Appraisal Test Scores and Participant Educational History*

Appraisal Test	Score	High School Diploma or GED?	Referral	Estimated Duration (approximate)**
Reading Math	225+ 225+	Yes	No Educational Referral	
Reading Math	225+ 225+	No	GED Instruction	100 - 3 00 hours
Reading Math	225+ 215 - 224	Yes	No Educational Referral	
Reading Math	215 - 224 225+	No	ABE Advanced/ Pre-GED Instruction	300 - 600 hours
Reading Math	215 - 224 215 - 224	Yes	No Educational Referral	
Reading Math	215 - 224 215 - 224	No	ABE Advanced/ Pre-GED Instruction	600+ hours
Reading Math	225+ 200 - 214	Yes/No	Adult Basic Education	600+ hours
Reading Math	200 - 214 225+	Yes/No	Adult Basic Education	600+ hours
Reading Math	215 - 224 200 - 214	Yes/No	Adult Basic Education	600+ hours
Reading Math	200 - 214 215 - 224	Yes/No	Adult Basic Education	600+ hours
Reading Math	200 - 214 200 - 214	Yes/No	Adult Basic Education	600+ hours
Reading Math	200 - 214 Below 200	Yes/No	Adult Basic Education	900+ hours
Reading Math	Below 200 200 - 214	Yes/No	Further Appraisal Needed	
Reading Math	Below 200 Below 200	Yes/No	Further Appraisal Needed	

* Projections based on California GAIN Appraisal Test scores.
**Estimated duration based on an educational goal of passing the GED.

CASAS, 1990

RECOMMENDED EDUCATIONAL REFERRALS

The integral nature of composite test score performance in the GAIN Appraisal process and its role in educational referral recommendations is apparent upon review of Table 4.5. This table summarizes the recommended educational referrals and estimated duration based upon the various combinations of test score performance levels on the GAIN Reading and Math Appraisals in conjunction with participants' educational history. This

table serves as a general framework for determining whether or not a GAIN client will receive an educational referral and, if so, the approximate number of hours of instruction recommended.

Projected Educational Referral Model

In order to determine educational referral projections specific to this GAIN study population, a model was developed. The components of this model include:

- Pre-established referral criteria;
- Information regarding whether or not clients had earned a diploma or degree; and
- Actual composite test score performance.

This model permits simulated educational projections through an integration of the general, recommended educational referral criteria delineated in Table 4.5 with specific data regarding clients' test score performance and educational background.

Actual, combined test score performance on the GAIN Reading and Math Appraisals or, in other words, composite test score performance in conjunction with the other model components underlie the following educational referral projections specific to this GAIN study population.

Projected Educational Referrals

The following projected educational referrals are based on the projected educational referral model described above. Projected educational referral data which are available for 180,457 GAIN participants in this study population are summarized in Figure 4.1.

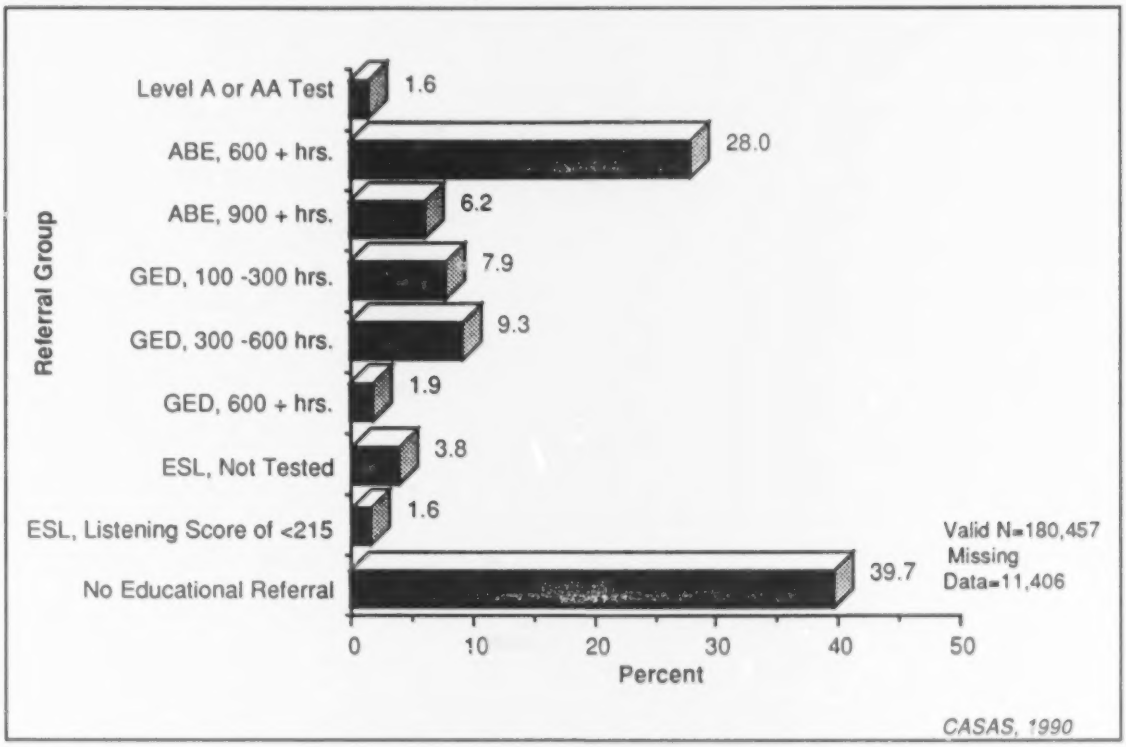

Figure 4.1 — Educational Referral Projections

It is projected that approximately 60 percent of the GAIN clients in this study population would receive an educational referral. Of these, it is estimated that more than one-third (34.2%) would be referred to Adult Basic Education (ABE) programs, 19.1 percent to General Education Development (GED) instruction, 5.4 percent to English as a Second Language (ESL) programs and the remaining 1.6 percent to Level A or Level AA testing.

Projected educational referrals to a given level within the ABE and GED categories are presented in Figure 4.1. As stated above, composite test score performance on the GAIN Reading and Math Appraisals provides the foundation for projected educational referrals for the majority of the GAIN participants in this study population. ESL referral

information is presented in Figure 4.1 and further information regarding referrals to ESL instruction and Level A or AA Testing is provided in Appendices B and C.

Participants projected to receive no educational referral minimally scored at the 215 and above level on both the GAIN Reading and Math Appraisals and nearly two-thirds (65%) scored 225 and above on both tests and have a high school diploma or equivalent.

Educational Referral Projections by Program Characteristics

The projected educational referral model was further utilized to develop educational referral projections in conjunction with data regarding participants' aid category, aid status and registration status. These data are summarized in Figures 4.2 through 4.4.

Aid Category. Projected educational referrals in conjunction with aid category data are available for 114,644 GAIN participants in this study population, more than two-thirds of whom are in the AFDC-FG category. Approximately 31 percent are in the AFDC Unemployed (AFDC-U) category and only one-half of one percent of the participants in this study population are in the Refugee Cash Assistance (RCA) and General Relief/General Assistance (GR) categories combined.

As presented in Figure 4.2, the estimated percentage of participants in each aid category to receive an educational referral differed sharply, ranging from 57 to 76 percent. The smallest percentage of participants estimated to receive no educational referral is in the AFDC-FG category (56.9%) followed by AFDC-U (61.3%). Seventy-three percent of the participants in the RCA category are projected to receive an educational referral as are 75.8 percent of the GR participants.

Approximately 34 percent of both AFDC categories are projected to be referred to Adult Basic Education (ABE) programs compared to 44 percent of participants in the RCA category. More than one-half (51.5%) of participants in the GR category were projected to receive an ABE referral. Because of the relatively small size of these two latter aid categories, caution in interpretation of this data is advised.

Educational referral projections to GED instruction were similar for both AFDC categories and also for participants in the GR category. Twenty to 22 percent in each of these categories were projected to receive a GED referral. Only 17.3 percent of the participants in the RCA category were projected to receive an educational referral to GED instruction.

The lowest percentage of projected educational referrals to English as a Second Language (ESL) is in the AFDC-FG category (1.4%). The AFDC-U category has 3.6 percent and the greatest percentage is in the RCA category (8.9%). An estimated three percent of participants in the GR category are projected for referral to ESL programs.

Very small percentages of participants in each aid category are projected to be referred to Level A or Level AA Testing. Percentages ranged from one percent (AFDC-FG) to 2.5 percent (RCA). The percentage of participants in the AFDC-U category projected for referral to Level A/AA Testing is 2.3 percent. No referrals to Level A or AA Testing are projected for participants in the GR category.

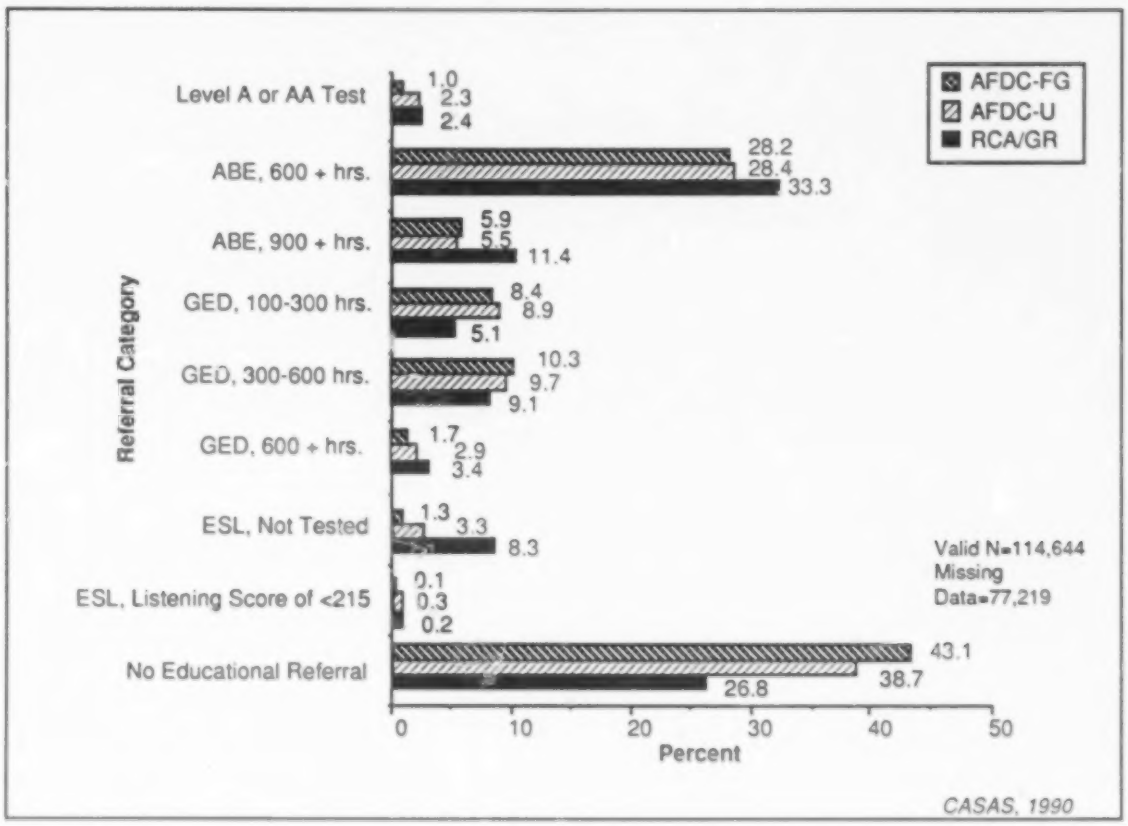

Figure 4.2 – Projected Educational Referrals by Aid Category

Aid Status. Projected educational referrals in conjunction with participants' Aid Status are available for 116,755 participants in this GAIN study population. Approximately 47 percent of participants are in each of the New and Existing categories and 6.3 percent are Restoration cases.

An educational referral is projected for 57.2 percent of the New cases, 60.8 percent of the Existing cases and 57.8 percent of the Restoration cases. The percentages of participants in each group projected for referral to ABE, GED and Level A and AA Testing are fairly similar. (See Figure 4.3.)

The greatest difference in projected educational referrals between the three Aid Status categories is in the percentage of participants projected for referral to ESL. Compared with 3.2 percent of the New cases and 2.6 percent in the Existing category, approximately one percent of the participants in the Restoration category are projected to ESL referral.

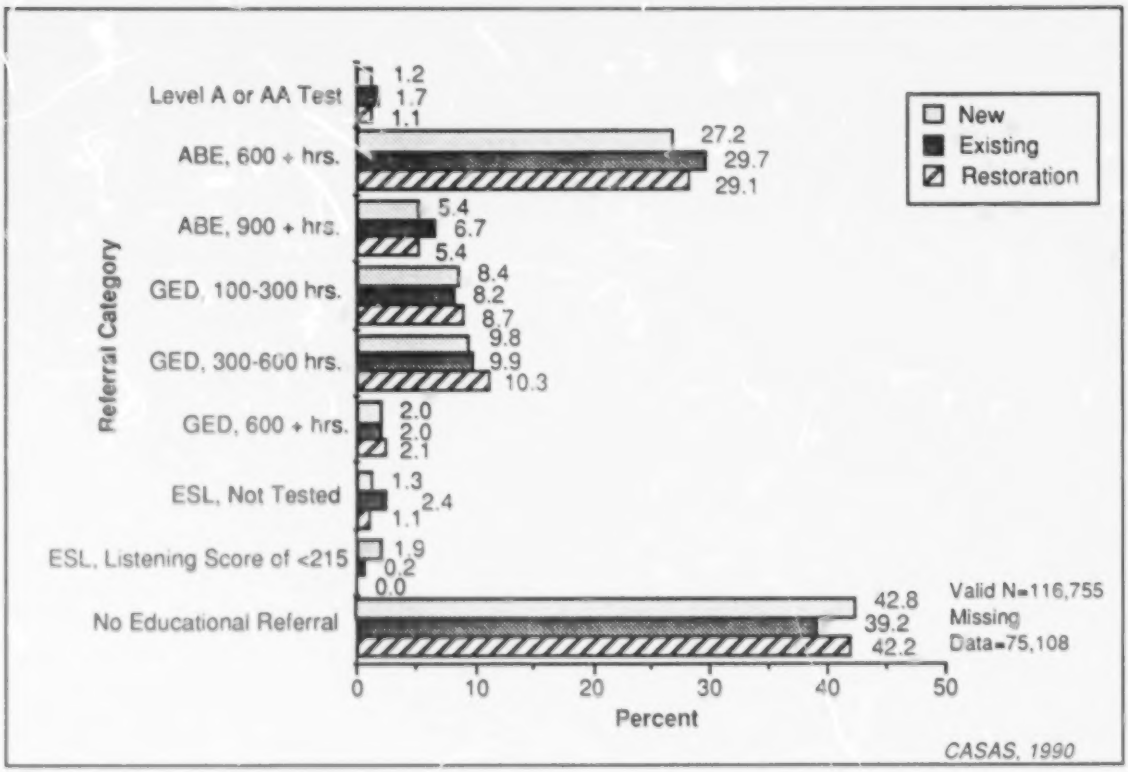

Figure 4.3 — Projected Educational Referrals by Aid Status

Registration Status. Data regarding participants Registration Status and projected educational referrals are available for 120,498 GAIN participants in this study population, the majority (84.3%) of whom have a Mandatory registration status. A greater percentage of Mandatory participants (59.5%) are projected to receive an educational referral compared to Voluntary participants (53.1%).

Nearly 36 percent of Mandatory participants are projected for referral to ABE programs compared to 29 percent of Voluntary participants. A greater percentage of Voluntary participants (22.6%) are projected for referral to GED instruction compared to an estimated 19.8 percent of Mandatory participants. More than two percent of the Mandatory participants are projected for ESL Referral compared to approximately one percent of the Voluntary participants. Finally, an estimated 1.6 percent of GAIN participants with a Mandatory registration status are expected to receive a referral to Level A/AA Testing compared with one-half of one percent (.5%) of participants with a Voluntary registration status.

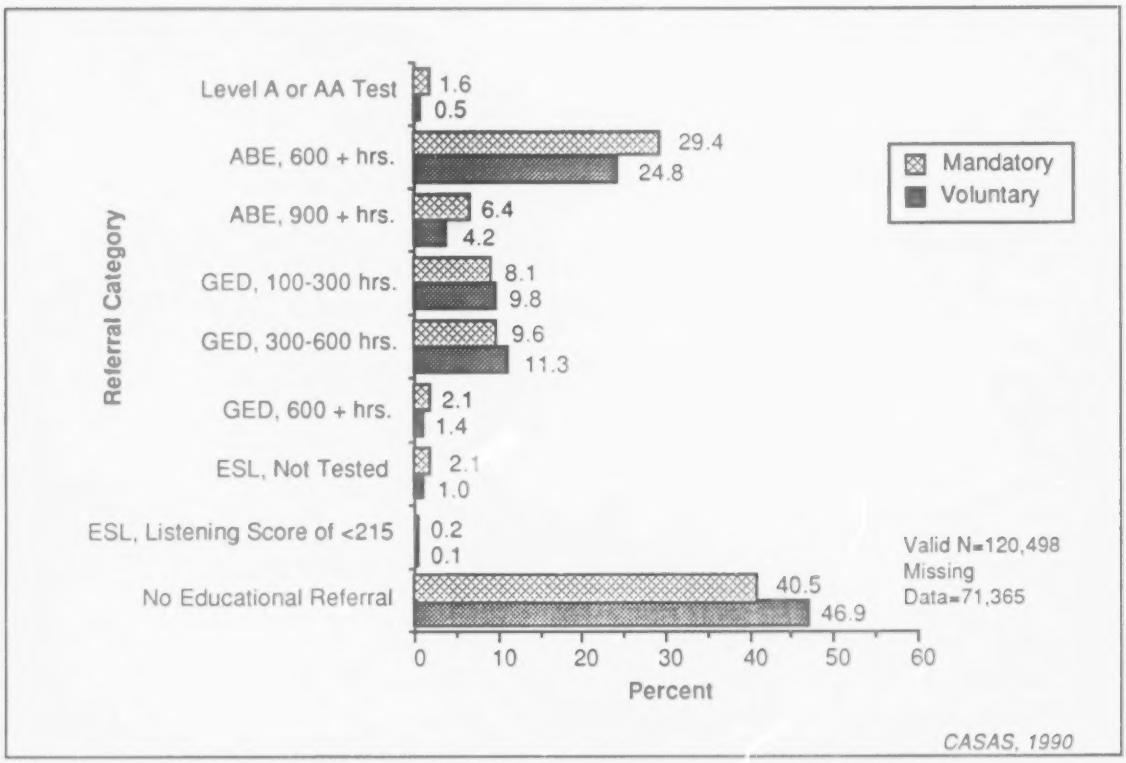

Figure 4.4 — Projected Educational Referrals by Registration Status

Comparative Educational Referral Projections

A few appreciable differences between projected educational referrals in conjunction with the various program characteristics versus those reported for the total study population are worth noting:

- Overall, approximately 57 to 61 percent of the GAIN participants in this study population are projected to receive an educational referral with a few exceptions. The greatest percentages are in the Refugee Cash Assistance (RCA) and General Relief/General Assistance (GR) categories, approximately 75.8 and 73.0 percent of whom respectively are projected to receive an educational referral. Voluntary participants have the smallest percentage (46.9%) of participants projected to receive an educational referral.
- Regarding projected referrals to Adult Basic Education, 33 to 36 percent of all categories of participants are projected to be referred to ABE with the exception of participants in the RCA and GR aid categories and Voluntary participants. The projected percentages for referral to ABE in these three categories are RCA 44.3; GR 51.5; and Voluntary 29.0.
- The percentage of participants projected for referral to GED instruction ranged from 19 to 21 percent. The exceptions once again are RCA and Voluntary participants who have projected educational referrals to GED instruction of 17.3 and 22.6 percent respectively.
- Projected educational referrals to ESL programs are quite different for the various program categories compared with the 5.4 percent projected for the overall population. As reported above, the range is from a low of 1.1 percent in both the Restoration and Voluntary categories and as high as 8.9 percent for RCA participants. Two to four percent of participants in the remaining categories are projected for educational referral to ESL programs.
- Approximately one to two percent of the GAIN participants in this study population overall are projected to be referred to Level A and AA Testing. Exceptions were in the AFDC-U and RCA categories, 2.3 and 2.5 percent respectively of whom are projected for referral to Level A and AA Testing. Participants with a Voluntary status predictably have the smallest percentage (0.5%) projected for referral to Level A and AA Testing.

Appendix A:

Sample GAIN Appraisal Answer Sheets

READING TEST

1 Ⓐ Ⓑ Ⓒ Ⓓ
3 Ⓐ Ⓑ Ⓒ Ⓓ
5 Ⓐ Ⓑ Ⓒ Ⓓ
7 Ⓐ Ⓑ Ⓒ Ⓓ
9 Ⓐ Ⓑ Ⓒ Ⓓ
11 Ⓐ Ⓑ Ⓒ Ⓓ
13 Ⓐ Ⓑ Ⓒ Ⓓ
15 Ⓐ Ⓑ Ⓒ Ⓓ
17 Ⓐ Ⓑ Ⓒ Ⓓ
19 Ⓐ Ⓑ Ⓒ Ⓓ
21 Ⓐ Ⓑ Ⓒ Ⓓ
23 Ⓐ Ⓑ Ⓒ Ⓓ
25 Ⓐ Ⓑ Ⓒ Ⓓ
27 Ⓐ Ⓑ Ⓒ Ⓓ
29 Ⓐ Ⓑ Ⓒ Ⓓ

STOP

MATH TEST

31 Ⓐ Ⓑ Ⓒ Ⓓ
32 Ⓐ Ⓑ Ⓒ Ⓓ
34 Ⓐ Ⓑ Ⓒ Ⓓ
36 Ⓐ Ⓑ Ⓒ Ⓓ
38 Ⓐ Ⓑ Ⓒ Ⓓ
40 Ⓐ Ⓑ Ⓒ Ⓓ
42 Ⓐ Ⓑ Ⓒ Ⓓ
44 Ⓐ Ⓑ Ⓒ Ⓓ
46 Ⓐ Ⓑ Ⓒ Ⓓ
48 Ⓐ Ⓑ Ⓒ Ⓓ
50 Ⓐ Ⓑ Ⓒ Ⓓ

STOP

1. Name _____ Today's Date: / /

2. Male ○ Female ○ Social Security No. – –

3. Was last school attended (high school or below) in California? Yes ○ No ○

④ County	⑤ Age	⑥ Highest grade level completed	⑦ Highest Diploma/ Degree Earned	⑧ Native Language	⑨ Ethnic Background	⑩ FOR OFFICIAL USE ONLY
			Mark one only			
00	Under 20 ○	00	CHSPE ○	English ○	Caucasian ○	000
11	20–24 ○	11	GED	Spanish ○	Hispanic ○	111
22	25–29 ○	22	Certificate ○	Vietnamese ○	Black ○	222
33	30–34 ○	3	High School	Laotian ○	Asian ○	333
44	35–39 ○	4	Diploma ○	Cambodian ○	Filipino ○	444
55	40–44 ○	5		Korean ○	American	555
66	45–49 ○	6	Technical ○	Chinese ○	Indian ○	666
77	50–54 ○	7	A A	Japanese ○	Indo-	777
88	55–60 ○	8	Degree ○	Tagalog ○	Chinese ○	888
99	Over 60 ○	9	4 yr College	Other ○	Pacific	999
			Graduate ○		Islander ○	
			None ○		Other ○	

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GAIN APPRAISAL PROGRAM

○ FG ○ U ○ RCA ○ GR

○ Mandatory
○ Voluntary

○ New Case
○ Restoration
○ Existing Case

○ Not Tested Direct ESL
○ Listening Score <215

FOR OFFICIAL USE ONLY
PART ONE OF THREE PARTS

DIRECTIONS FOR MARKING ANSWERS

1. Use No. 2 pencil only.
2. Do NOT use ink or ballpoint pen.
3. Make heavy black marks that fill circle completely.
4. Erase cleanly any answers you change.

Examples	Practice Questions
WRONG 1. Ⓐ ⊗ Ⓒ Ⓓ	READING 1. Ⓐ Ⓑ Ⓒ Ⓓ
WRONG 2. Ⓐ Ⓑ Ⓒ Ⓓ	
WRONG 3. Ⓐ Ⓑ Ⓒ ⊘	MATH 1. Ⓐ Ⓑ Ⓒ Ⓓ
RIGHT 4. Ⓐ Ⓑ ● Ⓓ	2. Ⓐ Ⓑ Ⓒ Ⓓ

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San Diego, CA 92138

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READING TEST

1	Ⓐ Ⓑ Ⓒ Ⓓ
2	Ⓐ Ⓑ Ⓒ Ⓓ
3	Ⓐ Ⓑ Ⓒ Ⓓ
4	Ⓐ Ⓑ Ⓒ Ⓓ
5	Ⓐ Ⓑ Ⓒ Ⓓ
6	Ⓐ Ⓑ Ⓒ Ⓓ
7	Ⓐ Ⓑ Ⓒ Ⓓ
8	Ⓐ Ⓑ Ⓒ Ⓓ
9	Ⓐ Ⓑ Ⓒ Ⓓ
10	Ⓐ Ⓑ Ⓒ Ⓓ
11	Ⓐ Ⓑ Ⓒ Ⓓ
12	Ⓐ Ⓑ Ⓒ Ⓓ
13	Ⓐ Ⓑ Ⓒ Ⓓ
14	Ⓐ Ⓑ Ⓒ Ⓓ
15	Ⓐ Ⓑ Ⓒ Ⓓ
16	Ⓐ Ⓑ Ⓒ Ⓓ
17	Ⓐ Ⓑ Ⓒ Ⓓ
18	Ⓐ Ⓑ Ⓒ Ⓓ
19	Ⓐ Ⓑ Ⓒ Ⓓ
20	Ⓐ Ⓑ Ⓒ Ⓓ
21	Ⓐ Ⓑ Ⓒ Ⓓ
22	Ⓐ Ⓑ Ⓒ Ⓓ
23	Ⓐ Ⓑ Ⓒ Ⓓ
24	Ⓐ Ⓑ Ⓒ Ⓓ
25	Ⓐ Ⓑ Ⓒ Ⓓ
26	Ⓐ Ⓑ Ⓒ Ⓓ
27	Ⓐ Ⓑ Ⓒ Ⓓ
28	Ⓐ Ⓑ Ⓒ Ⓓ
29	Ⓐ Ⓑ Ⓒ Ⓓ
30	Ⓐ Ⓑ Ⓒ Ⓓ

STOP

MATH TEST

31	Ⓐ Ⓑ Ⓒ Ⓓ
32	Ⓐ Ⓑ Ⓒ Ⓓ
33	Ⓐ Ⓑ Ⓒ Ⓓ
34	Ⓐ Ⓑ Ⓒ Ⓓ
35	Ⓐ Ⓑ Ⓒ Ⓓ
36	Ⓐ Ⓑ Ⓒ Ⓓ
37	Ⓐ Ⓑ Ⓒ Ⓓ
38	Ⓐ Ⓑ Ⓒ Ⓓ
39	Ⓐ Ⓑ Ⓒ Ⓓ
40	Ⓐ Ⓑ Ⓒ Ⓓ
41	Ⓐ Ⓑ Ⓒ Ⓓ
42	Ⓐ Ⓑ Ⓒ Ⓓ
43	Ⓐ Ⓑ Ⓒ Ⓓ
44	Ⓐ Ⓑ Ⓒ Ⓓ
45	Ⓐ Ⓑ Ⓒ Ⓓ
46	Ⓐ Ⓑ Ⓒ Ⓓ
47	Ⓐ Ⓑ Ⓒ Ⓓ
48	Ⓐ Ⓑ Ⓒ Ⓓ
49	Ⓐ Ⓑ Ⓒ Ⓓ
50	Ⓐ Ⓑ Ⓒ Ⓓ

STOP

1. Name _____ Today's Date: / /

2. Male ○ Female ○ Social Security No. – –

3. Was last school attended (high school or below) in California? Yes ○ No ○

④ County	⑤ Age	⑥ Highest grade level completed	⑦ Highest Diploma/ Degree Earned (Mark one only)	⑧ Native Language	⑨ Ethnic Background	⑩ FOR OFFICIAL USE ONLY
00	Under 20 ○	00	CHSPE ○	English ○	Caucasian ○	000
11	20–24 ○	11	GED Certificate ○	Spanish ○	Hispanic ○	111
22	25–29 ○	22	High School Diploma ○	Vietnamese ○	Black ○	222
33	30–34 ○	3		Laotian ○	Asian ○	333
44	35–39 ○	4		Cambodian ○	Filipino ○	444
55	40–44 ○	5		Korean ○	American Indian ○	555
66	45–49 ○	6	Technical ○	Chinese ○		666
77	50–54 ○	7	A.A. Degree ○	Japanese ○	Indo-Chinese ○	777
88	55–60 ○	8		Tagalog ○		888
99	Over 60 ○	9	4 yr. College Graduate ○	Other ○	Pacific Islander ○	999
			None ○		Other ○	

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GAIN APPRAISAL PROGRAM

○ FG ○ U ○ RCA ○ GR

○ Mandatory
○ Voluntary

○ New Case
○ Restoration
○ Existing Case

○ Not Tested Direct ESL
○ Listening Score <215

FOR OFFICIAL USE ONLY
PART ONE OF THREE PARTS

DIRECTIONS FOR MARKING ANSWERS

1. Use No. 2 pencil only.
2. Do NOT use ink or ballpoint pen.
3. Make heavy black marks that fill circle completely.
4. Erase cleanly any answers you change.

Examples	Practice Questions
WRONG 1. Ⓐ ⊗ Ⓒ Ⓓ	READING 1. Ⓐ Ⓑ Ⓒ Ⓓ
WRONG 2. Ⓐ Ⓑ Ⓒ Ⓓ	
WRONG 3. Ⓐ Ⓑ Ⓒ ◪	MATH 1. Ⓐ Ⓑ Ⓒ Ⓓ
RIGHT 4. Ⓐ Ⓑ ● Ⓓ	2. Ⓐ Ⓑ Ⓒ Ⓓ

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GAIN LISTENING TEST ■■ FORM 1

PRACTICE
1 Ⓐ Ⓑ Ⓒ Ⓓ
2 Ⓐ Ⓑ Ⓒ Ⓓ
3 Ⓐ Ⓑ Ⓒ Ⓓ
4 Ⓐ Ⓑ Ⓒ Ⓓ
5 Ⓐ Ⓑ Ⓒ Ⓓ

PRACTICE
6 Ⓐ Ⓑ Ⓒ Ⓓ
7 Ⓐ Ⓑ Ⓒ Ⓓ
8 Ⓐ Ⓑ Ⓒ Ⓓ
9 Ⓐ Ⓑ Ⓒ Ⓓ

PRACTICE
10 Ⓐ Ⓑ Ⓒ Ⓓ
11 Ⓐ Ⓑ Ⓒ Ⓓ
12 Ⓐ Ⓑ Ⓒ Ⓓ
13 Ⓐ Ⓑ Ⓒ Ⓓ
14 Ⓐ Ⓑ Ⓒ Ⓓ
15 Ⓐ Ⓑ Ⓒ Ⓓ

1. Name _____ Today's Date: / /

2. Male ○ Female ○ Social Security No. – –

3. Was last school attended (high school or below) in California? Yes ○ No ○

④ County	⑤ Age	⑥ Highest grade level completed	⑦ Highest Diploma/ Degree Earned	⑧ Native Language	⑨ Ethnic Background	⑩ FOR OFFICIAL USE ONLY
			Mark one only			
00	Under 20 ○	00	CHSPE ○	English ○	Caucasian ○	000
11	20–24 ○	11	GED Certificate ○	Spanish ○	Hispanic ○	111
22	25–29 ○	22	High School Diploma ○	Vietnamese ○	Black ○	222
33	30–34 ○	3		Laotian ○	Asian ○	333
44	35–39 ○	4		Cambodian ○	Filipino ○	444
55	40–44 ○	5		Korean ○	American Indian ○	555
66	45–49 ○	6	Technical ○	Chinese ○		666
77	50–54 ○	7	A A Degree ○	Japanese ○	Indo-Chinese ○	777
88	55–60 ○	8		Tagalog ○		888
99	Over 60 ○	9	4 yr. College Graduate ○	Other ○	Pacific Islander ○	999
			None ○		Other ○	

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GAIN APPRAISAL PROGRAM

○ FG ○ U ○ RCA ○ GR

○ Mandatory
○ Voluntary

○ New Case
○ Restoration
○ Existing Case

○ Not Tested Direct ESL
○ Listening Score < 215

FOR OFFICIAL USE ONLY
PART ONE OF THREE PARTS

DIRECTIONS FOR MARKING ANSWERS

1. Use No. 2 pencil only.
2. Do NOT use ink or ballpoint pen.
3. Make heavy black marks that fill circle completely.
4. Erase cleanly any answers you change.

Examples

WRONG
1. Ⓐ ⊗ Ⓒ Ⓓ
WRONG
2. Ⓐ Ⓑ ⊘ Ⓓ
WRONG
3. Ⓐ Ⓑ Ⓒ ◪
RIGHT
4. Ⓐ Ⓑ ● Ⓓ

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San Diego, CA 92138

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READING TEST

1	Ⓐ	Ⓑ	Ⓒ	Ⓓ
2	Ⓐ	Ⓑ	Ⓒ	Ⓓ
3	Ⓐ	Ⓑ	Ⓒ	Ⓓ
4	Ⓐ	Ⓑ	Ⓒ	Ⓓ
5	Ⓐ	Ⓑ	Ⓒ	Ⓓ
6	Ⓐ	Ⓑ	Ⓒ	Ⓓ
7	Ⓐ	Ⓑ	Ⓒ	Ⓓ
8	Ⓐ	Ⓑ	Ⓒ	Ⓓ
9	Ⓐ	Ⓑ	Ⓒ	Ⓓ
10	Ⓐ	Ⓑ	Ⓒ	Ⓓ
11	Ⓐ	Ⓑ	Ⓒ	Ⓓ
12	Ⓐ	Ⓑ	Ⓒ	Ⓓ
13	Ⓐ	Ⓑ	Ⓒ	Ⓓ
14	Ⓐ	Ⓑ	Ⓒ	Ⓓ
15	Ⓐ	Ⓑ	Ⓒ	Ⓓ
16	Ⓐ	Ⓑ	Ⓒ	Ⓓ
17	Ⓐ	Ⓑ	Ⓒ	Ⓓ
18	Ⓐ	Ⓑ	Ⓒ	Ⓓ
19	Ⓐ	Ⓑ	Ⓒ	Ⓓ
20	Ⓐ	Ⓑ	Ⓒ	Ⓓ
21	Ⓐ	Ⓑ	Ⓒ	Ⓓ
22	Ⓐ	Ⓑ	Ⓒ	Ⓓ
23	Ⓐ	Ⓑ	Ⓒ	Ⓓ
24	Ⓐ	Ⓑ	Ⓒ	Ⓓ
25	Ⓐ	Ⓑ	Ⓒ	Ⓓ

STOP

MATH TEST

26	Ⓐ	Ⓑ	Ⓒ	Ⓓ
27	Ⓐ	Ⓑ	Ⓒ	Ⓓ
28	Ⓐ	Ⓑ	Ⓒ	Ⓓ
29	Ⓐ	Ⓑ	Ⓒ	Ⓓ
30	Ⓐ	Ⓑ	Ⓒ	Ⓓ
31	Ⓐ	Ⓑ	Ⓒ	Ⓓ
32	Ⓐ	Ⓑ	Ⓒ	Ⓓ
33	Ⓐ	Ⓑ	Ⓒ	Ⓓ
34	Ⓐ	Ⓑ	Ⓒ	Ⓓ
35	Ⓐ	Ⓑ	Ⓒ	Ⓓ
36	Ⓐ	Ⓑ	Ⓒ	Ⓓ
37	Ⓐ	Ⓑ	Ⓒ	Ⓓ
38	Ⓐ	Ⓑ	Ⓒ	Ⓓ
39	Ⓐ	Ⓑ	Ⓒ	Ⓓ
40	Ⓐ	Ⓑ	Ⓒ	Ⓓ
41	Ⓐ	Ⓑ	Ⓒ	Ⓓ
42	Ⓐ	Ⓑ	Ⓒ	Ⓓ
43	Ⓐ	Ⓑ	Ⓒ	Ⓓ
44	Ⓐ	Ⓑ	Ⓒ	Ⓓ
45	Ⓐ	Ⓑ	Ⓒ	Ⓓ
46	Ⓐ	Ⓑ	Ⓒ	Ⓓ
47	Ⓐ	Ⓑ	Ⓒ	Ⓓ
48	Ⓐ	Ⓑ	Ⓒ	Ⓓ
49	Ⓐ	Ⓑ	Ⓒ	Ⓓ

STOP

① Name _____ Today's Date: / /

② Male ○ Female ○ Social Security No. – –

③ County	④ Age	⑤ Highest grade level completed	⑥ Highest Diploma/ Degree earned	⑦ Native Language	⑧ Ethnic Background	⑨ Form
			Mark one only			
0 0	Under 16 ○	0 0	None ○	English ○	Caucasian ○	0 0
1 1	16–17 ○	1 1	CHSPE ○	Spanish ○	Hispanic ○	● ●
2 2	18–21 ○	2 2	GED Certificate ○	Vietnamese ○	Black ○	2 2
3 3	22–24 ○	3	High School Diploma ○	Laotian ○	Asian ○	3 3
4 4	25–29 ○	4	Technical ○	Cambodian ○	Filipino ○	4 4
5 5	30–34 ○	5	A.A. Degree ○	Korean ○	American Indian ○	5 5
6 6	35–39 ○	6	4 yr. College Graduate ○	Chinese ○	Indo–Chinese ○	6 6
7 7	40–44 ○	7		Japanese ○	Pacific Islander ○	7 7
8 8	45–49 ○	8		Tagalog ○	Other ○	8 8
9 9	50–54 ○	9		Other ○		9 9
	55–60 ○					
	Over 60 ○					

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GAIN APPRAISAL PROGRAM

FG ○ U ○ RCA ○ GR ○

○ Mandatory
○ Voluntary

○ New Case
○ Restoration
○ Existing Case

○ Not Tested Direct ESL
○ Listening Score < 215

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PART ONE OF TWO PARTS

DIRECTIONS FOR MARKING ANSWERS

1. Use No. 2 pencil only.
2. Do NOT use ink or ballpoint pen.
3. Make heavy black marks that fill circle completely.
4. Erase cleanly any answers you change.

Examples					Practice Questions				
		WRONG			READING				
1.	Ⓐ	⊗	Ⓒ	Ⓓ	1.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
		WRONG							
2.	Ⓐ	Ⓑ	⊘	Ⓓ	MATH				
		WRONG			1.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
3.	Ⓐ	Ⓑ	Ⓒ	⊘					
		RIGHT			2.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
4.	Ⓐ	Ⓑ	●	Ⓓ					

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FORM 01

Basic Skills Certification Test

① Name _____ Today's Date ___/___/___

② ○ Male ○ Female

Social Security Number ☐☐☐-☐☐-☐☐☐☐

GAIN CERTIFICATION

READING	MATH
1 Ⓐ Ⓑ Ⓒ Ⓓ	31 Ⓐ Ⓑ Ⓒ Ⓓ
2 Ⓐ Ⓑ Ⓒ Ⓓ	32 Ⓐ Ⓑ Ⓒ Ⓓ
3 Ⓐ Ⓑ Ⓒ Ⓓ	33 Ⓐ Ⓑ Ⓒ Ⓓ
4 Ⓐ Ⓑ Ⓒ Ⓓ	34 Ⓐ Ⓑ Ⓒ Ⓓ
5 Ⓐ Ⓑ Ⓒ Ⓓ	35 Ⓐ Ⓑ Ⓒ Ⓓ
6 Ⓐ Ⓑ Ⓒ Ⓓ	36 Ⓐ Ⓑ Ⓒ Ⓓ
7 Ⓐ Ⓑ Ⓒ Ⓓ	37 Ⓐ Ⓑ Ⓒ Ⓓ
8 Ⓐ Ⓑ Ⓒ Ⓓ	38 Ⓐ Ⓑ Ⓒ Ⓓ
9 Ⓐ Ⓑ Ⓒ Ⓓ	39 Ⓐ Ⓑ Ⓒ Ⓓ
10 Ⓐ Ⓑ Ⓒ Ⓓ	40 Ⓐ Ⓑ Ⓒ Ⓓ
11 Ⓐ Ⓑ Ⓒ Ⓓ	41 Ⓐ Ⓑ Ⓒ Ⓓ
12 Ⓐ Ⓑ Ⓒ Ⓓ	42 Ⓐ Ⓑ Ⓒ Ⓓ
13 Ⓐ Ⓑ Ⓒ Ⓓ	43 Ⓐ Ⓑ Ⓒ Ⓓ
14 Ⓐ Ⓑ Ⓒ Ⓓ	44 Ⓐ Ⓑ Ⓒ Ⓓ
15 Ⓐ Ⓑ Ⓒ Ⓓ	45 Ⓐ Ⓑ Ⓒ Ⓓ
16 Ⓐ Ⓑ Ⓒ Ⓓ	46 Ⓐ Ⓑ Ⓒ Ⓓ
17 Ⓐ Ⓑ Ⓒ Ⓓ	47 Ⓐ Ⓑ Ⓒ Ⓓ
18 Ⓐ Ⓑ Ⓒ Ⓓ	48 Ⓐ Ⓑ Ⓒ Ⓓ
19 Ⓐ Ⓑ Ⓒ Ⓓ	49 Ⓐ Ⓑ Ⓒ Ⓓ
20 Ⓐ Ⓑ Ⓒ Ⓓ	50 Ⓐ Ⓑ Ⓒ Ⓓ
21 Ⓐ Ⓑ Ⓒ Ⓓ	51 Ⓐ Ⓑ Ⓒ Ⓓ
22 Ⓐ Ⓑ Ⓒ Ⓓ	52 Ⓐ Ⓑ Ⓒ Ⓓ
23 Ⓐ Ⓑ Ⓒ Ⓓ	53 Ⓐ Ⓑ Ⓒ Ⓓ
24 Ⓐ Ⓑ Ⓒ Ⓓ	54 Ⓐ Ⓑ Ⓒ Ⓓ
25 Ⓐ Ⓑ Ⓒ Ⓓ	55 Ⓐ Ⓑ Ⓒ Ⓓ
26 Ⓐ Ⓑ Ⓒ Ⓓ	56 Ⓐ Ⓑ Ⓒ Ⓓ
27 Ⓐ Ⓑ Ⓒ Ⓓ	57 Ⓐ Ⓑ Ⓒ Ⓓ
28 Ⓐ Ⓑ Ⓒ Ⓓ	58 Ⓐ Ⓑ Ⓒ Ⓓ
29 Ⓐ Ⓑ Ⓒ Ⓓ	59 Ⓐ Ⓑ Ⓒ Ⓓ
30 Ⓐ Ⓑ Ⓒ Ⓓ	60 Ⓐ Ⓑ Ⓒ Ⓓ
STOP	61 Ⓐ Ⓑ Ⓒ Ⓓ
	62 Ⓐ Ⓑ Ⓒ Ⓓ
	STOP

③ COUNTY	④ AGE	⑤ HIGHEST GRADE LEVEL COMPLETED	⑥ HIGHEST DIPLOMA/[illegible] EARNED	⑦ NATIVE LANGUAGE	[illegible]	⑨ FORM
0 0	○ Under 20	0 0	○ None	○ English	○ Caucasian	● 0
1 1	○ 20–24	1 1	○ CHSPE	○ Spanish	○ Hispanic	1 ●
2 2	○ 25–29	2 2	○ GED Certificate	○ Vietnamese	○ Black	2 2
3 3	○ 30–34	3	○ High School Diploma	○ Laotian	○ Asian	3 3
4 4	○ 35–39	4	○ Technical	○ Cambodian	○ Filipino	4 4
5 5	○ 40–44	5	○ A A Degree	○ Korean	○ American Indian	5 5
6 6	○ 45–49	6	○ 4 year College Graduate	○ Chinese	○ Indo-Chinese	6 6
7 7	○ 50–54	7		○ Japanese	○ Pacific Islander	7 7
8 8	○ 55–60	8		○ Tagalog	○ Other	8 8
9 9	○ Over 60	9		○ Other		9 9

DIRECTIONS FOR MARKING ANSWERS

- Use No. 2 pencil only.
- Do NOT use ink or ballpoint pen.
- Make dark marks that fill circle completely.
- Erase cleanly any answers you change.

EXAMPLES

Ⓐ Ⓑ ● Ⓓ — RIGHT

Ⓐ Ⓑ Ⓒ Ⓓ
Ⓐ Ⓑ ⊗ Ⓓ
Ⓐ Ⓑ Ⓒ Ⓓ
Ⓐ Ⓑ Ⓒ Ⓓ
Ⓐ Ⓑ ● Ⓓ
— WRONG

PRACTICE QUESTIONS

Reading
R1 Ⓐ Ⓑ Ⓒ Ⓓ
R2 Ⓐ Ⓑ Ⓒ Ⓓ

Math
M1 Ⓐ Ⓑ Ⓒ Ⓓ
M2 Ⓐ Ⓑ Ⓒ Ⓓ

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○ FG	○ Mandatory	○ New Case
○ U		○ Restoration
○ RCA	○ Voluntary	○ Existing Case
○ GR		

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PART ONE OF THREE PARTS

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Appendix B:
Listening Appraisal Referrals

BACKGROUND

Assessment has been integral to the Greater Avenues for Independence (GAIN) program enacted by the California Legislature in September 1985, providing the foundation upon which training and educational needs are identified and an employability plan is developed. Reading, Math and Listening Appraisals were developed by CASAS to appraise the basic reading, math and functional listening comprehension skills of GAIN participants. Data regarding the GAIN Reading and Math Appraisals are presented in the body of this GAIN IV 1990 Report. The focus of this appendix is on the listening component of the GAIN Appraisal Program.

LISTENING APPRAISAL

The GAIN Listening Appraisal was developed from the CASAS Item Bank which consists of over 5,000 test items and has been under continual development and refinement since 1980. The GAIN Listening Appraisal is comprised of test items which have been extensively field tested and calibrated through the application of Item Response Theory (IRT) which assigns a reliable index of standardized difficulty to each item. Test forms developed from these items, therefore, accurately assess basic listening comprehension in a functional context.

The GAIN Listening Appraisal assesses a participant's listening comprehension and the use of this skill in an employability setting. Designed for persons with limited proficiency in English, this twelve item, multiple-choice test assesses whether a participant has sufficient English skills to take the GAIN Reading and Math Appraisals or should be referred to ESL instruction. Participants who speak little or no English are not tested but rather are referred directly to ESL instruction.

LISTENING APPRAISAL DATA

The following GAIN Listening Appraisal data are based upon assessment of a total of 10,131 GAIN participants from July 1986 through April 1990. Although most California counties are represented in this small Listening Appraisal sample, the majority (69%) are from San Diego, Merced, and Santa Clara counties. These data represent only a partial profile of the estimated GAIN caseload who stand to benefit from administration of the GAIN Listening Appraisal. In addition to limited implementation, answer sheets used in the data collection process have been modified over time in recognition of evolving operational needs and submitted answer sheets are not always complete. As a result, some data are based upon an even smaller sampling and caution in data analysis is encouraged. The following is a summary of the background characteristics of this GAIN Listening Appraisal sample.

DEMOGRAPHIC, EDUCATIONAL AND PROGRAM CHARACTERISTICS

Gender. Based on 9,796 cases, 57.3 percent of the GAIN participants in the Listening Appraisal sample are male, 42.7 percent are female.

Age. Only 7.1 percent of the 9,948 participants for whom data are available are less than 25 years of age. Thirty-two percent reported their ages between 25 and 34 and 37.4 percent were between the ages of 35 and 44. Nearly 24 percent reported their age as 45 or above.

Ethnic Background. Approximately 53 percent of 9,888 cases were Indo-Chinese, 32.1 percent were Hispanic, and 7.3 percent were Asian. Less than three percent were Caucasian and the remaining 4.7 percent included four ethnic categories, namely Black, Native American, Filipino and Pacific Islander.

Native Language. More than half (55.8%) of the 9,843 GAIN participants reported Vietnamese, Laotian or Cambodian as their native language and approximately 31 percent reported Spanish. The remaining 13.2 percent of participants identified other native languages.

Education. More than 83 percent of 9,787 participants reported not having any type of diploma or degree. Approximately 12 percent reported the attainment of a high school diploma or equivalent and the remaining 4.5 percent reported earning either an Technical, Associate of Arts (AA) or Four Year Degree.

Based on 9,525 participants, 55 percent completed 0-6 years of school, 29.5 percent completed 7-11 years and 10.9 percent completed 12 years of school. Only 4.5 percent of the participants in this sample reported completion of 13 and more years of school.

Program Characteristics. Data regarding participants' program characteristics are based upon approximately 500 GAIN participants. Data collection in these categories, which were added to the answer sheet in response to the identified need for this information, began in March 1987.

Aid Category. Approximately 46 percent are AFDC-FG and more than one-half (53.6%) of the 496 respondents are in the AFDC-U aid category.

Aid Status. Of the 480 GAIN participants for whom aid status information is available, New cases accounted for 21 percent and approximately three-fourths (76.7%) are Existing cases. Restoration cases accounted for 2.3 percent of the participants in this sample.

Registration Status. Based on 507 cases, 95.9 percent are Mandatory, 4.1 percent Voluntary.

Test Score Performance. Listening Test data on the GAIN Listening Appraisal are available for 8,700 GAIN participants in this study sample. Slightly more than 83 percent scored below 215 and 16.9 percent scored 215 and above. Of the 83 percent of participants who scored below 215, 37.3 percent scored below 200 on the GAIN Appraisal Listening Test. The mean or average scale score on the Listening Test was 195.2.

Table B.1

Listening Test Referrals

Scale Score	*Recommended Referral*
214 and Below	ESL Instruction
215 and Above	Administer GAIN Appraisal Reading and Math Tests

CASAS, 1990

REFERRAL PROJECTIONS

Based on test score performance on the GAIN Appraisal Listening Test, approximately 83 percent of the 8,700 GAIN participants in this study sample for whom educational referral projection data are available were referred to ESL programs. Nearly 17 percent were referred to the GAIN Reading and Math Appraisal.

SUMMARY

Native language data reported in the GAIN IV 1990 Report indicate that approximately 16 percent of more than 185,000 GAIN participants reported a language other than English as their primary or native language. The ESL segment of the GAIN-eligible population is expected to increase with continued implementation of GAIN in the larger and more diverse counties. Use of the GAIN Listening Appraisal is, therefore, also projected to increase. Because many of these participants potentially lack the English reading skills needed to take the GAIN Reading and Math Appraisals, administration of the Listening Appraisal can assist in the identification and appropriate referral of the Limited English Proficient (LEP) participant.

Appendix C:
Level A and Level AA Tests

BACKGROUND

Assessment has been integral to the Greater Avenues for Independence (GAIN) program enacted by the California Legislature in September 1985, providing the foundation upon which training and educational needs are identified and an employability plan is developed. The GAIN Appraisal Program consists of the GAIN Reading and Math Appraisals (See GAIN IV Report, CASAS 1990) the GAIN Listening Appraisal (See Appendix B), and the Level A and AA Tests. These tests were developed by CASAS specifically for the GAIN program. The focus of this appendix is on the Level A Pre-employment Tests and Level AA Test which are used in conjunction with the GAIN Appraisal Basic Reading and Math Appraisals.

The Level A and AA Tests are used to assess the basic skills of GAIN participants demonstrating lower levels of proficiency or functional literacy. Like the other GAIN Appraisal Tests, the Level A and AA Tests were developed from the CASAS Item Bank consisting of more than 5,000 test items which have been under continual development and refinement since 1980. Test items have been extensively field tested and calibrated through the application of Item Response Theory (IRT) which assigns a reliable index of standardized difficulty to each item. Test forms developed from these items accurately assess basic reading comprehension and math computation skills for lower levels of achievement in a functional context. Table C.1 presents guidelines for using Level A and AA Tests and the recommended referrals based upon test score performance.

THE LEVEL A PRE-EMPLOYMENT TEST

The Level A Pre-employment Test is utilized in conjunction with the GAIN Appraisal to further assess basic skills for lower levels of achievement in functional literacy. If a client scores below 200 on the reading or both the reading and math portions of the GAIN

Appraisal, a CASAS Level A Pre-employment Test can be used to validate that score. The Level A Test consists of separate reading comprehension and mathematical computation components.

The Level A reading test contains 25 multiple-choice items and, although not a timed test, should be completed within thirty to forty-five minutes. The untimed math test has 24 multiple-choice items and should also be completed within approximately thirty to forty-five minutes. The reading and math components may be administered together or the reading section may be administered alone to further assess basic skills in reading. Referrals to Adult Basic Education (ABE) are based upon scale score performance level. (See Table C.1.)

THE LEVEL AA TEST

The Level AA Test was developed to measure lower levels of achievement. It is administered to GAIN participants who have taken the Level A Test and achieved a scale score below a CASAS 180 or took longer than 40 minutes to complete the Level A Test. The Level AA Test is administered individually and orally by an examiner who completes all demographic information and test item responses for the GAIN client. This test is designed for native English speakers and, therefore, not appropriate for Limited English Proficient (LEP) students.

Individually administered, the Level AA Test consists of 25 items and takes approximately twenty minutes. Each test item is spoken no more than twice and client responses are also oral. A scale score below a CASAS 180 on this test indicates the possibility of a learning difficulty and referral for further diagnostic assessment and professional evaluation is recommended. (See Table C.1.)

SCOPE OF DATABASE, LEVEL A AND AA TESTS

Data based upon the Level A and AA Tests were collected during the time period from July 1986 through April 1990. These data include demographic and educational characteristics of GAIN participants who were administered either Level A or AA Tests.

Data are based upon 1,964 GAIN clients who took the Level A Test and 560 GAIN clients who were orally administered the Level AA Test during this time period. This is a partial profile of the GAIN population, representative only of those GAIN clients for whom data are available. In addition to gradual implementation, answer sheets used in the data collection process have been modified over time in recognition of evolving op-

erational needs. Program characteristics, for example, were not collected until March 1987 and are not reported as the data are quite limited. Data are also based upon submitted answer sheets which are not always complete. While all 58 California counties submitted data, the numbers are frequently very small. For these reasons, caution in data analysis is advised.

Table C.1
Level A and AA Test Usage and Referral Recommendations

Scale Score	*Recommended Referral*
Reading 215 and above or Reading 200-214 and Math below 200	Do not administer Level A Test. Participant has basic skills in reading but not in math. Refer participant (with or without a high school diploma or equivalent) to Adult Basic Education to attain math skills. Expected duration of instruction is approximately 6-18 months.
Reading below 200 and Math 200-214 or Math below 200	Administer Level A Reading Test
Level A 200 and Above	Participant lacks basic skills, but is educable and capable of achieving basic competency level. Refer participant (with or without a high school diploma or equivalent) to Adult Basic Education to achieve a basic competency level in both reading and math. Expected duration of instruction is approximately 9-18 months.
Level A 180 -199	Participant lacks basic skills, but is educable and capable of achieving basic competency level with individualized assistance at the beginning of instruction. Refer participant (with or without a high school diploma or equivalent) to Adult Basic Education to achieve a basic level of competency in reading and math. Expected duration of instruction is approximately 9-24 months.
Level A scale score below 180 or participant takes longer than 40 minutes to complete Level A Test	Administer Level AA Test
Level AA 180 and Above	Participant may not be capable of achieving a basic level of competency, but could benefit from Adult Basic Education in conjunction with basic and directed vocational training leading to some form of employment. Consult with local educational provider to determine availability of instruction.
Level AA Below 180	Participant may not be able to achieve a level of basic competency within a 24 month period and/or may have a learning disability. An educational or vocational rehabilitation professional should be consulted.

LEVEL A PRE-EMPLOYMENT TEST DATA

The following provides a demographic, educational and program profile of the 1,964 GAIN clients administered Level A Tests during the time period from July 1986 through April 1990 along with a summary of test score performance.

DEMOGRAPHIC AND EDUCATIONAL CHARACTERISTICS

Gender. Of the 1,854 GAIN participants in the Level A Pre-employment Test sample for whom gender data are available, approximately 55 percent were Female and 45.2 percent were Male.

Age. Age data are available for 1,853 GAIN clients in this sample. Nearly four percent were under the age of 25 and approximately 20 percent age 25-34. Slightly more than 37 percent were between the ages of 35 and 44 and 38.7 percent age 45 and above.

Ethnicity. Approximately 36 percent of the 1,877 GAIN participants who reported their ethnic background were Hispanic, 19 percent Caucasian, and nearly 18 percent Black. Of the remaining 17 percent, 9.6 percent were Asian, 9.5 percent Indo-Chinese, 3.7 percent Native American and 4.2 percent reported Filipino, Pacific Islander and other ethnic origins.

Native Language. Based on 1,854 respondents, approximately 59 percent reported English as their native language. Spanish was the native language of 19.3 percent; Laotian 6.6 percent; Vietnamese 3.6 percent; and Cambodian 2.0 percent of the sample. Korean, Chinese and Tagalog combined were the native languages reported by one percent of the sample and the remaining 8.4 percent reported other native languages.

Education. Almost 87 percent of 1,842 GAIN clients in this Level A Test sample reported completing fewer than 12 years of education. Nearly 31 percent of these completed 0-6 years and 56 percent competed 7 through 11 years of education. Nearly 14 percent completed 12 years or more.

Almost 80 percent of 1,863 GAIN clients in this sample reported not having any type of diploma or degree. Approximately 17 percent reported having earned a high school diploma or equivalent and 2.9 percent earned other degrees.

LEVEL A TEST SCORE PERFORMANCE

Reading. Reading test score performance is available for 1,799 GAIN participants in this sample. Actual test scores are aggregated for reporting purposes and reported at one of three levels of test score performance. Nearly 56 percent of this GAIN sample achieved a scale score of 200 or above and approximately 31 percent achieved a scale score at the 180 thru 199 level. Nearly 14 percent (13.6%) scored at the 180 and lower scale score level.

Math. Math test score data are available for 1,142 GAIN clients in this Level A Test sample. Like reading test data, actual test scores are aggregated for reporting purposes. More than one-half (53.2%) of the GAIN participants scored at the 180 through 199 test score level. Slightly more than seven percent achieved less than a 180 scale score and 39.6 percent achieved a 200 and above scale score.

SUMMARY

Nearly all (97.5%) of the Level A Test score data reported above are based on the use of Form 12. The majority of the participants in this sample would not be able to satisfy basic survival needs, perform routine work and social demands, and participate effectively in social and familiar work situations.

SCOPE OF THE LEVEL AA TEST DATA

Data on the Level AA Test were collected during the time period from July 1986 through April 1990 from 560 GAIN clients. The following summarizes demographic and educational data along with test score performance on the Level AA Test for this small sample. The number of participants for whom data are available in each category are indicated.

DEMOGRAPHIC AND EDUCATIONAL CHARACTERISTICS

Gender. Out of the 514 participating GAIN clients in this Level AA Test database, 50 percent were Male and 50 percent were Female.

Age. Age data are available for 382 GAIN participants. Nearly 29 percent were 21 years of age and under including 11 percent age 18 and under. Approximately 36 percent were age 22-40 and 33 percent age 41-60. More than eight percent (8.4%) were over age 60.

Ethnicity. Based upon 504 GAIN participants, 32.3 percent were Caucasian, 42.3 percent Hispanic and 17.1 percent Black. American Indian accounted for three percent and Asian 1.4 percent. Filipino and Indo-Chinese combined accounted for 1.4 percent and Other 2.6 percent.

Native Language. Seventy-four percent of the 515 GAIN participants reported English as their native language. The remaining 26 percent who identified other native languages were erroneously administered this test designed exclusively for native English speakers.

Education. Of the 502 GAIN participants who reported education data, more than 30 percent (32.5%) completed 0-6 years including 5.4 percent who reported that they had completed none. More than one-half of the respondents (56.3%) completed 7-11 years and only 11.2 percent completed 12 or more years of education.

TEST SCORE PERFORMANCE

Test score performance data available for 560 GAIN participants in this Level AA Test sample are aggregated into two levels of test score performance. Nearly three-fourths (74.1%) of the GAIN participants in this sample scored at the 180 and above level and approximately 26 percent scored below 179. The mean or average scale score on the GAIN Level AA Test was 190.7.

Appendix D:
GAIN Basic Skills Certification Test

BACKGROUND

The GAIN Basic Skills Certification Test was developed to assess a participant's reading comprehension and math computation skills relative to the workplace. This two-part certification test is designed for persons who have demonstrated proficiency at a high intermediate level of Adult Basic Education (ABE) or achieved a minimum of CASAS 215 scale score on a Survey Achievement Test. The reading comprehension component of the test has 30 items and should be completed within thirty minutes. The math computation component of the test has 32 items and should be completed within forty minutes. The certification tests can be group or individually administered.

The GAIN Basic Skills Certification Tests are administered to verify a participant's ability to apply basic reading and math skills in a functional or "life-skills" setting. The test results are used in conjunction with instructor assessed individual progress in course work to determine the timing of administration of the Basic Skills Certification Test. Upon achieving a CASAS 215 or above on a given level certification test, participants proceed to their next appropriate GAIN activity.

PSYCHOMETRIC PROPERTIES

CASAS' test item validity has withstood ongoing internal review and external evaluation since 1980. The GAIN Basic Skills Certification Tests were developed from the CASAS Item Bank which consists of over 5,000 test items. The application of Item Response Theory (IRT) to these 5,000 items assigns a reliable index of standardized difficulty to each item. The following psychometric properties are provided in support of the ability of the certification tests to accurately measure basic reading and math skills in a functional context.

Item-Total Correlations. Point-biserial correlation coefficients were obtained for the Basic Skills Certification Reading and Math Tests. In the case of the Basic Skills Reading Test, the coefficients ranged from .32 to .57 with a mean of .45. Similarly, coefficients for the Basic Skills Math Test ranged from .14 to .49 with a mean of .39.

P-Values. The P-Value refers to the proportion of examinees passing an individual item and gives an index of difficulty for each item relating to the sample of persons being tested. In the case of the Basic Skills Certification Reading Test, the P-Values ranged from .81 to .98 with an average of value of .92 indicating that an average of 92% of the examinees passed each item. For the Basic Skills Certification Math Test, the P-Value ranged from .69 to .96 with an average P-Value of .86.

Reliability. Computation of Kuder-Richardson (KR)-20 indices for the GAIN Basic Skills Certification Test items indicate that in the case of the Reading Basic Skills Test, the (KR)-20 was .85, and for the Math Basic Skills Test, the figure was .81. These figures support the reliability of the Basic Skills Certification Tests.

GAIN BASIC SKILLS CERTIFICATION TEST PILOT STUDY

Developed specifically for GAIN Adult Basic Education (ABE) certification, these tests, along with the Survey Achievement Test, were piloted to assess the criteria, impact, and effectiveness of progress monitoring and certification testing in the ABE component of the GAIN program. A pilot study was conducted during the nine-month period from July 1988 through March 1989 to determine administrative costs associated with progress monitoring and certification testing and examine the impact of these on an individual's length of stay in Adult Basic Education. The pilot also assessed the impact of progress monitoring and certification testing at the county level to identify operational and administrative problems.

Four counties who serve an extensive ABE population participated in the pilot study. The participating counties were Kings, Merced, San Mateo, and San Diego. These four counties were asked to describe testing procedures, costs and type of educational services offered prior to the GAIN ABE Pilot Study. At the conclusion of the pilot study, these counties reported on the four study objectives. (See Table D.1.)

Table D.1

Basic Skills Certification Pilot Study Summary

Objective	*Four County Results*
Determine the administrative cost associated with the monitoring of progress and certification testing.	Additional administrative costs were documented but were outweighed by a more rapid exit of participants out of ABE.
Determine the impact of monitoring progress and certification testing on a participant's length of stay in ABE education.	Two counties already using CASAS tests noted no change. The other two counties noted that participants were exiting ABE more quickly through the use of progress monitoring and certification tests.
Assess the impact of a county's transition to mandatory progress monitoring and certification testing.	The initial transition to mandatory progress monitoring and certification testing can have a significant impact since consistent methods for monitoring, tracking, and certification will need to be established. Overall potential gains are expected to outweigh these initial start-up costs.
Identify problems in the administration of CASAS progress and certification tests.	No significant problems were reported in the use of CASAS progress and certification tests. Problems mentioned were administrative in nature and are anticipated to diminish as the tests became fully implemented.

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The opportunity to use the Basic Skills Certification Tests was made available in the four counties involved in the initial pilot study and elsewhere. A demographic profile and test score performance data based upon the Basic Skills Certification Tests for a sample of 1,410 GAIN clients follows.

SCOPE OF BASIC SKILLS CERTIFICATION TEST DATA

Data for this report were gathered from July 1988 through April 1990 for 1,410 GAIN clients. While data were submitted from several counties, many of the submitted answer sheets failed to identify the county of origin. It is estimated , however, that the majority of the data are from San Diego County. These data present only a limited sampling of the eventual GAIN caseload which stands to benefit from administration of the GAIN Basic Skills Certification Test and are neither representative of the larger GAIN study population (See GAIN IV 1990) nor the overall GAIN client population.

DEMOGRAPHIC CHARACTERISTICS

Gender. Based on 1,282 participants in the Basic Skills Certification sample, approximately 68 percent were Female and 32 percent were Male.

Age. Nearly one-half (49.7%) of the 1,195 GAIN participants who reported their ages between 25 and 34. Approximately 31 percent were in the 35 through 44 age category and 7.9 percent were 45 and older. Nearly 12 percent (11.6%) were under age 25.

Ethnicity. Approximately 39 percent (38.7%) of 1,178 GAIN clients reporting were Hispanic, 28.5 percent Black, 19.3 percent Caucasian and four percent Asian. The remaining 8.7 percent were comprised of Native American, Indo-Chinese, Pacific Islander, Filipino and Other Ethnic origins.

Native Language. Native language data are based upon 1,164 GAIN participants, approximately 62 percent of whom reported English as their native language. Spanish was identified by approximately 27 percent and Vietnamese, Laotian, and Cambodian combined accounted for the native language of 5.5 percent of the respondents. Other native languages accounted for the remaining 5.1 percent of participating GAIN clients.

Education. Approximately 67 percent of the 1,049 GAIN clients reported completing 11 years or less of education including 14 percent who completed 0-6 years. While 29.3 percent reported completion of 12 years or more, only 3.5 percent completed greater than 12 years of education.

BASIC SKILLS CERTIFICATION TEST SCORE PERFORMANCE

Actual test scores are aggregated at four CASAS scale score levels for reporting purposes. (See Chapter One in the GAIN IV 1990 Report for scale score interpretation.) Following is a summary of test score performance for this GAIN Basic Skills Certification Test sample. Reading test scores reflect performance by 1,174 participants and math test scores by 1,120 GAIN participants in this sample.

Reading Test Score Performance. Almost 96 percent (95.8%) achieved a scale score of 215 or above including approximately 78 percent of the sample who achieved a scale score of 225 or above. Slightly more than four percent scored below a CASAS 215 including two percent who scored below a 200 scale score. The mean or average reading score was 231.9.

Math Test Score Performance. Ninety-three percent of the GAIN participants achieved a CASAS scale score of 215 or above including 63.1 percent who scored 225 and above. Of the remaining seven percent, 5.8 percent scored between a CASAS 200 and 214 scale score and 1.2 percent scored below 200. The mean score on the math component of the Certification Test was 227.6.

SUMMARY

The following are highlights of test score performance and participant characteristics.

- Most students scored above a CASAS 215 scale score on both the Reading (96%) and Math (93%) portions of the Basic Skills Certification Test.
- The mean reading score of 231.9 and mean math score of 227.6 indicate that a clear majority of the GAIN clients in this sample are functioning above a basic literacy level and therefore able to handle basic literacy tasks and computational skills in a functional setting related to employment.

The Basic Skills Certification Test represents a major step forward in the assessment of GAIN clients' ability to perform basic literacy and computational tasks in a functional setting pertaining to employment. This appendix has provided descriptive and statistical data which is both informative and supportive of the reliability of the Basic Skills Certification Test as an assessment instrument in the GAIN program.